EXITS ,ENTRANCES AND ENTREPRENEURSHIP: AN EXPLORATION OF ECONOMIC THEORIES OF ENTREPRENEURSHIP THROUGH NEW INDEPENDENT ENTRY AND INFANT EXIT

MARY BERNADEITE SHARP

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ABSTRACT

EXITS, ENTRANCES AND ENTREPRENEURSHIP: AN EXPLORATION OF ECONOMIC THEORIES OF ENTREPRENEURSHIP THROUGH NEW INDEPENDENT ENTRY AND 'INFANT EXIT'

The thesis began as a study of new firm formation. Preliminary research suggested that infant death rate was considered to be a closely related problem and the search was for a theory of new firm formation which would explain both.The thesis finds theories of exit and entry inadequate in this respect and focuses instead on theories of entrepreneurship, particularly those which concentrate on entrepreneurship as an agent of change. The role of information is found to be fundamental to economic change and an understanding of information generation and dissemination and the nature and direction of information flows is postulated to lead coterminously to an understanding of entrepreneurship and economic change. The economics of information is applied to theories of entrepreneurship and some testable hypotheses are derived. The testing relies on establishing and measuring the information bases of the founders of new firms and then testing for certain hypothesisied differences between the information bases of survivors and non-survivors.No theory of entrepreneurship is likely to be straightforwardly testable and many postulates have to be established to bring the theory to a testable stage. A questionnaire is used to gather information from a sample of firms taken from a new micro-data set established as part of the work of the thesis. Discriminant Analysis establishes the variables which best distinguish between survivors and non-survivors. The variables which emerge as important discriminators are consistent with the theory which the analysis is testing. While there are alternative interpretations of the important variables ,collective consistency with the theory under test is established. The thesis concludes with an examination of the implications of the theory for policy towards stimulating new firm formation.

MARY SHARP
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ENRTEPRENEURSHIP,
NEW BUSINESSES,
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CONTENTS

Page No.

Title .....

Abstract .....

Introduction 7

Chapter

1 Entrepreneurship 18
1.0 Introduction .....
1.1 Entry and New Firm Founders, Entrepreneurship and Entrepreneurs .....
1.2 Entrepreneurship: Equilibrating of Disequilibrating? .....
1.3 Conclusion .....

2 Information Economics and New Firm Formation 41

2.0 The Paradox of knowledge .....
2.1 From Alertness to Action .....
2.1.1 Expectations and Imagination .....
2.1.2 Search .....
2.2 Limits to Individuals Entrepreneurial Activity .....
2.2.1 Limits to Spontaneous Absorption .....
2.2.2 Limits to Imagination .....
2.2.3 Limits to Search .....
2.3 Individuals' Information Environments or 'The Field of Opportunity' .....
2.4 Monopoly in the Information Market .....
2.5 Information for New Firm Formation .....
2.6 Uncertainty and New Firm Formation .....
2.7 Quality of Information .....
2.8 Survivors and Failures .....
2.9 Conclusion .....

Chapter Page No.

3 Measuring Information : The Questionnaire 91
3.1 Measuring Information .....
3.2 Measuring the Exclusiveness of Information .: The Main Discriminant Analysis
3.2.1 Measuring Localness By Establishing Linkage
3.3 An Alternative Discriminant Analysis .....
3.3.1 Quantity of Information And the Ability to Use It
3.4 A Third Discriminant Analysis.....
3.6 Conclusion .....

4 Data Analysis 115

4.0 Introduction .....
4.1 Testing the Theory .....
4.2 Discriminating Between Survivors and Failures .....
4.3 The Groups.....
4.4 The Discriminant Analyses.....
4.5 The Alternative Grouping .....
4.6 The Discriminant Runs.....
4.6.1 Discriminant Run 1.....
4.6.2 Discriminant Run 2.....
4.6.3 Discriminant Run 3.....
4.7 Conclusion .....

5 The Supply of Entrepreneurship 146

5.1 The Entrepreneurs.....
5.2 Empirical Investigation Of The Supply Of Entrepreneurship.....
5.3 Entrepreneurship by Area .....
5.4 Entrepreneurship by Trade .....
5.5 Trades With A Single Entrant .....
5.6 Conclusion .....

6 Policy Recommendations 166

6.0 Introduction .....
6.1 Provision of Information .....
6.2 Education and Training .....
6.3 Finance .....
6.4 Reducing the Failure Rate .....
6.5 Conclusion .....

References..... 178

Bibliography..... 187

TABLES PAGE NO.

Table 4.1 DISCRIMINANT RUN 1 130
" 4.2 DISCRIMINANT RUN 2 139
" 4.3 DISCRIMINANT RUN 3 142

" 5.1 Survivors and Failures by Geographical Area . 153
" 5.2 5 Figure SIC's With Higher Than Average Failure Rates 155
" 5.3 SIC's With Lower Than Average Failure Rates 155

Appendix

1 Entry: Theories and Empirical Evidence 196
1.0 Introduction .....
1.1 Entry and Industry Profitability .....
1.2 Entry and the Capital Cost of Entry .....
1.3 Entry and Industrial Structure .....
1.4 Entry and Growth .....
1.5 Entry and Unemployment .....
1.6 Conclusion .....

2 Exit and Infant Mortality 216
2.0 Introduction .....
2.1 Exit and the Capital Cost of Entry.....
2.2 Exit and Profitability .....
2.3 Exit and Entry .....
2.4 Exit and 'the Proportion of Small Firms In An Industry' .....
2.5 Exit and Growth .....
2.6 Exit and Productivity Change .....
2.7 Young and Infant Deaths: An Identifiable Sub-Group? .....
2.8 Conclusion .....

3 The Micro-Data Set 240
3.1 Introduction .....
3.2 An Alternative Data Source .....
3.3 Survivors and Failures .....
3.4 The Data .....
3.5 The Main Entrepreneurial Events : A Preliminary Survey of the Data.....
3.6 Comparison of the Data Base with Other Bases.

4. The Questionnaire Sample..... 268

5. The Questionnaire 269

6. Description of Variables Considered For Discriminant Analyses 289

7. Survivors and Failures By 5 Figure SIC 292

8. Trades Arranged By Number Of Entrants In Ascending Order 298

9. Failures and Survivors By Minimum List Heading..... 300

10. Graphical Presentation Of Separation Of Groups in Discriminant Run 1 304

11. Graphical Presentation Of Separation Of Groups In Discriminant Run 2 305

12. Discriminant Analysis 306

INTRODUCTION

Perfect knowledge is an important assumption in the attainment of economic equilibrium and as such its implications are pervasive throughout economic theory. As an assumption it facilitates many useful conclusions, particularly in the theory of the firm. This usefulness would appear to have made us accepting of the assumption's patent lack of realism and it has made the analysis of equilibrium under uncertainty, that is, under real world conditions, a special case of the more general analysis under perfect knowledge.

Alchian (1950 p.220n) however, has pointed out that the limitations of the assumption are perhaps more serious than previously thought. The assumption of perfect foresight or perfect knowledge, he suggests, nearly results in tautological and empty statements. He points out that since it is recognised that we can't know everything, the economists 'ceteris paribus' allows that actions are taken within "a given state and distribution of the arts". But:

> "this is perilously close, if not equivalent, to saying that action is taken only where the outcome is accurately foreseen or that information is always limited".
>
> (Alchian opp. cit.).

To maintain the 'given state and distribution of the arts' would require that action is taken only where the outcome is accurately

foreseen because if the outcome were different from that foreseen it would represent a 'surprise' and new information and a new state and distribution of the arts. Equally, if action is taken within a given state and distribution of the arts, the scenario would appear to rule out actions explicitly aimed at generating information. Unless uncertainty and imperfect knowledge are explicitly recognised it is difficult to conceive of or incorporate actions which are designed to generate information. How can the state of the arts be increased if we do not allow actions to generate information because uncertainty and imperfect knowledge have been assumed away? Implicitly these assumptions hold the state of the arts constant which is obviously too restrictive particularly in a world of uncertainty and incomplete information where:

> " a large fraction of behaviour .... is necessarily directed at increasing the state of the arts and venturing into an unknown sphere."
>
> (Alchian 1950 p.220n.)

These are actions aimed at generating and disseminating information. It is particularly serious to limit these actions if, as in Kirzner's view:

> "the movement from disequilibrium to equilibrium is at once a movement from imperfect knowledge to perfect knowledge and from unco-ordination to co-ordination".

(Kirzner 1973 p.218.)

Hayek in his seminal work on Economics and Knowledge reinforces that view of the attainment of equilibrium. He explained it thus:

> ".... equilibrium merely means that the foresight of the different members of society is .... correct in the sense that every person's plan is based on the exploitation of the same set of external facts .... Correct foresight is then not .... a precondition which must exist in order that equilibrium may be arrived at. It is rather the defining characteristic of a state of equilibrium".
>
> (F.A. Hayek 1949 p77).

Correct foresight will be achieved as perfect knowledge is approached so again the movement from disequilibrium to equilibrium involves the generation and dissemination of knowledge and information.The assertion that a tendency towards equilibrium exists in this view:

> "can hardly mean anything ,but that under certain conditions the knowledge and intentions of the different members of society are supposed to come more and more into agreement or.....that the expectations of the people and particularly the entrepreneurs will become more and more correct"
>
> (Hayek (1949) p45)

The link between equilibrium and entrepreneurship is developed by Kirzner. The neoclassical view is criticised because of:

> "its inability to address those crucial theoretical tasks for which the notion of entrepreneurship can alone provide the key".
>
> (Kirzner in Rizzo 1979 p.143.)

The neoclassical view has no theory of the competitive process which moves the economic system towards equilibrium. In a world beset by disequilibrium explaining the events which comprise the competitive process is clearly the crucial theoretical task. Entrepreneurship, in the Austrian view, explains these events. It provides the key to the equilibrating events of a disequilibrium situation. If entrepreneurship is the key to the equilibrating events of the disequilibrium situation and the movement from disequllibrium to equilibrium is a movement from imperfect knowledge to perfect knowledge, then entrepreneurship should be explainable in terms of the generation and dissemination of information and knowledge. It is a major part of the argument of this thesis that it is the search for and generation and dissemination of knowledge and information which describes the entrepreneurial role in the market (or mixed) economy.

In exploring entrepreneurship in terms of information and knowledge generation and dissemination, the focus is on two main authors.Kirzner (1973) developed a theory of entrepreneurship which he framed as an 'alertness' to profit opportunities in the

economic system. Its contribution was particularly pervasive because the entrepreneurial activity also described the competitive market process. Casson (1982) could be described as taking up where Kirzner left off. Casson's theory was also based on the differential perception of or access to or synthesis of information. It is a very wide ranging theory touching on many areas of economics and presented through a series of models, but at its simplest Casson's theory could be interpreted as developing Kirzner's notion of alertness and through the medium of 'Jack Brash' describing how and where profit opportunities might occur in the real world.

It would appear that a more accurate theoretical approximation would reflect a greater Austrian influence. Binks and Coyne (1983) suggest at least three reasons for the failure of Anglo-American economic theory to adequately define a role for the entrepreneur. The reasons they state are:

1. The desire to produce deterministic calculable economic models capable of analysis with available mathematical techniques.

2. The treatment of an uncertain world as one which can be made certain by some objective adaptation.

3. The emphasis on adjustment between equilibrium states.

The Austrian approach, on the contrary, focuses on uncertainty and disequilibrium and in doing so generates non-predictive, non-deterministic models of entrepreneurial activity which cannot in consequence be tested.

Casson (1982) uses many of the existing tools of economic theory including equilibrium analysis so it is not surprising that at the outset he is optimistic about developing a predictive theory (opp.cit. p.10). The researcher, however, in developing Kirzner's and Casson's theories to explain new independent entry came to the conclusion along Austrian lines that a predictive theory is impossible, the Austrian argument being basically that:

> ".... anyone who has the sort of information necessary to predict the behaviour of entrepreneurs has a strong incentive to stop theorising and become an entrepreneur himself".
>
> (Casson 1982 p.9.)

Casson (opp.cit. p.10) also suggested, however that even if the theory was found to be non-predictive it might still be testable retrodictively using historical data.

With Casson's (opp. cit. p.393) research agenda for the future development of his theory in mind, the researcher attempted to develop some postulates about the sources of information on which new firm formation is based. The main outcome was a postulate about the 'exclusiveness' of privileged or new information

available to potential new firm founders. An important result of this postulate was that the survival and failure rates among new firms would be primarily dependent on the 'exclusiveness' of the new firm founders' information base. The main empirical work of the thesis tests this postulate's predictions about the characteristics of survivors and failures (or more precisely between 'survivors with growth' and 'failures and no growth survivors',see 4.3.3). Although the theory (from Casson 1982 and Kirzner 1973) developed and tested through the prediction of the above postulate is itself considered to be inherently non-predictive, it did prove possible by distinguishing between the characteristics of survivors and failures to provide some evidence in support of the theory.

The focus of the thesis, however,is away from the importance of individual behaviour and towards an examination of the system which generates survivors and failures. In brief, the theory of entrepreneurship as developed suggests that failure is a natural and essential part of the information generation process and hence of economic efficiency in the presence of uncertainty. The implications of the theory are similar to those of the natural selection models within economics (e.g. Alchian 1950, Nelson and Winter 1982) where the effect of purposive action is subsumed in the operation of an economic system which selects from all actions taken,the most appropriate. But Alchian's proviso also applies that there is no tendency towards perfection in the economic

system. Survivors will be selected as the most appropriate of those submitted to the economic system for testing so that:

> "the rewards will go to the relatively fastest even if all competitors loaf".
>
> (Alchian 1950 p.213.)

The implication for the present study is that any attempt to isolate 'success or survival factors' from among the population of survivors will be confounded by the stochastic nature of the selection process.

However, this is not to dismiss the relevance of individuals' purposive action and appropriate operating conditions to survival. Hannah (1984) warns against pursuing the natural selection metaphor too far.The thesis suggests that entrepreneurial strategy will be only a secondary influence in the selection of survivors. A strategy may determine which firms will survive but the number which survive is determined by the working of the economic system by impersonal market forces. Interestingly this also accords with Hannah's caution about balancing the elements of economic biology (opp.cit. p.220) and the deterministic economic tradition of emulating the physical sciences (Casson opp. cit. p. 394).

Although approached through a theory of entrepreneurship the thesis is exclusively concerned with new independent entry. The

advantage of concentrating on this sub-set of entrepreneurship is that it is clearly measurable unlike some of the activities within established firms which on many definitions would also be described as entrepreneurial. The initial aim of the study was to explain new independent entry and it was the poor empirical results of traditional determinants of entry which prompted the approach through theories of entrepreneurship. The particular development of the theories of entrepreneurship used in the thesis is strictly only applicable to 'new independent entry' entrepreneurship. It remains to be seen whether the particular postulates of this development would apply to the performance of research and development output of established firms or to the establishment and performance of branch plants or subsidiary firms (which could also be described as entrepreneurial).

It may be that theoretical precision will be limited in this particular field. The entrepreneurial function is at the centre of the analysis of change which in turn is possibly idiosyncratic and unpredictable and, therefore, difficult or impossible to model. The theories of entrepreneurship followed (primarily Kirzner 1973 and Casson 1982) are based on knowledge and information which turn out to be 'peculiar commodities' (Shackle 1952). The process of generation, perception and accumulation of these commodities limits the precision with which entrepreneurial activity can be specified. But if there is a possibility of

theoretical precision it is most likely to be discovered where there is access to large samples. 'New independent entry' provides the possibility of this access and at least the chance of deriving empirical laws based on large samples (Hannah 1984 p.22n) even where the subject appears to deny the possibility of empirical precision. In brief it was the perception of the high proportion of new entrants who failed in 'infancy' detected through isolating the total population for a limited area and industrial classification which informed the research approach to new independent entry. This became the single most important entrepreneurial event discovered in the course of the study demanding an explanation.

CHAPTER 1

ENTREPRENEURSHIP

This chapter attempts to incorporate independent entry as an economic phenomenon into the theory of entrepreneurship. There are two main tasks:

1. To identify new firm formation (independent entry) as part of entrepreneurship as understood in economic theory.

2. To select a theory of entrepreneurship with the potential to explain new firm formation taking the assumption that new firm formation is correctly identified as part of entrepreneurial activity,

1.0 Introduction:

The discussion of entry theory in Appendix 1 begs for a new approach to the phenomenon of new firm formation. The literature on entrepreneurs and entrepreneurship has a long history (Cantillan 1755) and might be expected to provide a useful perspective for the analysis of new firm formation.

Some would suggest (Johnson and Darnell 1976) that since much of the activity of new firms is not substantially different or revolutionary then it is not entrepreneurial. This indicates the influence of Schumpeter's concept of entrepreneurship and the tacit belief that:

> "entrepreneurship is confined to the big, spectacular and comparatively infrequent."
>
> (Coleman 1973 p.112).

But Coleman also indicates that:

> "much activity with an equal right to be called entrepreneurial is carried on in short and medium term situations .... the continuous adaptation of the technical and/or organisational structure of an existing business to small changes in the market for both factors and for final products."
>
> (Coleman ibid).

Empirical studies in fact show the vast majority of entrepreneurs to have been imitative. The point is raised as to whether it is imitative or innovative to bring a new technique to an industry or region where it has not been used before?

It appears an inevitability that problems of definition will exist. Economic historians have not, and are unlikely to, ever provide a universally acceptable definition of entrepreneurship. In this context, however, in order to be able to draw on the theories of entrepreneurship to explain new firm formation, we do not need a complete definition of entrepreneurship is not a neccesity. It is only necessary to show that new firm formation is part of entrepreneurial activity. If this link is established then the weight of economic theories of entrepreneurship cannot be ignored.It follows that theories of entry will become theories of entrepreneurship and founders of new firms may be termed entrepreneurs.

1.1 Entry And New Firm Founders. Entrepreneurship And Entrepreneurs:

Entry theory concentrating on growth, profitability and capital cost of entry lacks recognition of,or at least considerably abstracts from, the significance of individual human activity. Entrepreneurship, on the other hand, as a body of theory holds the activity of individuals to be of paramount importance. The function entrepreneurship is one which is carried out by a person:

"an entrepreneur is a person, not a team or a committee or an organisation. Only individuals can take decisions".

(Casson 1982 p.23)

Further association of entrepreneurship with individuals comes from Calvo and Wellisz (1980) who make the assumption that every firm, has only one entrepreneur. While this is an extreme assumption the idea that entrepreneurship is associated with individuals (rather than teams or committees) is succinctly put by Kaldor (1960 p.43). Decisions affecting the firm as a whole:

"should be made on a comparison with all other decisions already made or likely to be made (and) must therefore pass through a single brain."

(Kaldor 1960 p.43.)

The literature on entrepreneurship never allows us to lose sight of the fact that we are talking about individuals. However, so much is this the case that much of the literature on entrepreneurship consists of detailed business histories or case studies at the expense of the development of general theories. The approaches to entrepreneurship theory and entry theory seem to represent opposite ends of the theoretical continuum. Entry theory sacrifices realism to testability. The determinants of entry are patently unrealistic and also lack real explanatory power but they are potentially measurable and testable. Entrepreneurship, on the

other hand, has been studied and reported in such detail that it denies generalisation or the development of testable theories.

Yet clearly entry and entrepreneurship are part of the same phenomenon. Cole (1968) on the basis of studying entrepreneurship for twenty years, provides the link. One of his six main propositions is that the entrepreneur:

> "has attachment to one or more specific business units which he may be conceived to have initiated and to be attempting to maintain and if possible to aggrandize".
>
> (Cole 1968 p.61)

Gorb (et.al. 1981) suggests that the link is widely accepted in the literature:

> ".... the small business literature defines an entrepreneur as anyone who starts a new business".
>
> (Gorb et.al. 1981 p.31).

Cole (1968) goes further than simply stating the link between entrepreneurs and new firms. He stresses the importance of the relationship between the entrepreneur and his firm suggesting that only by paying the closest attention to the relations of the single entrepreneur to a business unit or complex of units will there be progress in linking entrepreneurship to economic processes. Given the clear identification of entrepreneurs with the units which they

have initiated, why have 'entry' and 'entrepreneurship' developed separately? There seems to have been a reluctance on the part of many researchers and writers on the process of new firm formation to use the term entrepreneurship because of its apparent wider connotations.The word entrepreneur provokes images of charismatic figures leading large organisations. The founding of a large new concern producing a new product is largely a phenomenon of the 19th and early 20th century. It was in founding a large concern (large relative to the average new firm today) producing a new and perhaps quietly revolutionary product that gave the founders of such firms a starring role in economic theory and progress and for many decades shaped the idea of an 'entrepreneur'. Case studies of charismatic figures such as Henry Ford, Austin & Morris, the Vickers Brothers and Courtaulds abound. Such figures made entrepreneurship a very visible phenomena and clearly illustrated the importance of the function to economic progress. However, the case studies tended to remain just that - case studies. The individuality of the characters and situations involved made it difficult to draw out theoretical underpinnings that would have facilitated their incorporation into mainstream economic theory. (Sociology and psychology theorists were notably more successful) . Austrian theories of entrepreneurship, particularly the exposition of Schumpeter, encouraged the idea of entrepreneurs as commercial revolutionaries,the fuel of the capitalist engine. As a result it became extremely difficult to incorporate the entrepreneur into neoclassical equilibrium theory. The rise of the conglomerates and multi-nationals putting a great

deal of money into extensive research and development of new products and processes overshadowed the activity of individual entrepreneurs. Invention and innovation became associated with large established firms and the traditional entrepreneur lost his starring role.

The coterminous development of managerial theories of the firm in the light of the divorce of ownership from control further ensured that entrepreneurial role was marginalised in mainstream economic theory. But in as much as new firms continued to be formed every day, entrepreneurs and entrepreneurship still existed. Only its past identification with the charismatic figures who were its most famous proponents made it seem an inappropriate term for the proprietor of a new small firm. The difference may be taken to be one of degree as far as economic theory is concerned. New firm founders belong to the class of entrepreneurs.

However, while all new firm founders belong to the class of entrepreneurs we must not limit our conception of the entrepreneurial function to the process of new firm formation. Even if we cannot define exactly who are entrepreneurs in order to understand the process of new firm formation, it is probably important to understand the entrepreneurial role in the economy. It does seem possible to arrive at a more complete understanding of the entrepreneurial function other than to define accurately which individuals might be called entrepreneurs. Most writers in the field would disagree that all entrepreneurs form new firms, or that

entrepreneurship is completely described by new firm formation. Oxenfeldt (1943) is very specific in his definition of an entrepreneur:

> ".... entrepreneur is used .... to denote an individual active in the direction of a business in which he aims equity, provided such business is less than one year old."
>
> (Oxenfeldt 1943 p.75.)

A narrow definition of an entrepreneur leads to a similarly narrow definition of the function of entrepreneurship. Entrepreneurship on the above definition becomes the forming of a new firm. Clive Sinclair could no longer be called an entrepreneur, entrepreneurial status appears to be very short-lived. Entrepreneurs mature, after a period of time they may become for instance managers? Despite the activity of large firms research and development departments, which it seems inappropriate to describe as entrepreneurship, there is still a great deal of invention and innovation by individuals who correspond to our ideas of entrepreneurs. But these individuals would not be called entrepreneurs on Oxenfeldt's definition.The Austrian concept of entrepreneurship, on the other hand, clearly trancends firm formation. Schumpeter suggests that entrepreneurial activity constituted a threat to existing producers. The entrepreneurial activity constituted the threat of entry rather than actual entry. Kirzner(1973) also made it clear that his concept of entrepreneurship was independent of the existence of entry. Recognising that entry could be prevented by

lack of resources Kirzner emphasised that this did not interfere with the role of entrepreneurship in the competitive process:

> "anyone is a potential entrepreneur, since the purely entrepreneurial role presupposes no special initial good fortune in the form of valuable assets."
>
> (Kirzner 1973 p.16.)

Casson (1982) similarly divorced entrepreneurship from the ability to command resources. He describes qualified and unqualified entrepreneurs.Qualified entrepreneurs are able to exploit opportunities they have perceived because either through education, personal wealth or good social contacts, they can amass the necessary resources. Unqualified entrepreneurs have entrepreneurial ability but no access to capital or other necessary resources. However, the access to capital does not prejudice their entrepreneurial activity or ability.

Divorcing the entrepreneurial from the financial represents a departure from traditional ideas of the entrepreneur. The entrepreneur was primarily a risk taker and particularly a financial risk taker. But since many new firms are begun with very low capital input, the idea of individuals whose main function is defined as taking financial risk would, on the one hand, be only marginally true of our new firm founders whom we define on all other criteria as entrepreneurs and, on the other hand, would be much more applicable to those who have dealings on the stock

exchange and yet are not on any of the other criteria, entrepreneurs.

If our theory of entrepreneurship is more than a theory of new firm formation, then it cannot be limited to considering only the activity of those who can command sufficient resources to actually form new firms. It must be able to describe the activity of individuals who fell at the last hurdle', individuals whose ideas were clearly specified and backed with intention but whose aims were thwarted. If we exclude from the theory of entrepreneurship the activity of those who are struggling to raise finance and to get their projects off the ground or who have met some other barrier to entry and will never form a new firm, then the numbers of entrepreneurs hinges on individuals' access to finance and the height of the barriers to entry. But in Appendix 1 capital cost of entry was dismissed as a determinant of entry as it lacked explanatory power.

Entrepreneurship can only be more than a theory of entry if it includes the behaviour of individuals prior to new firm formation. It should explain the activity of individuals who do not actually succeed in their attempts to form a new firm and it should also account for the presence of a pool of potential entrants who form a 'threat' to existing producers. Schumpeter reserves the term entrepreneur for the brilliant, imaginative, daring innovator. His entrepreneurs are people high in achievement motivation, the people who strive to make things happen - in the

laboratory, on the production floor, in the sales office. But their continual activity also constitutes a threat to existing producers in much the same way as in neoclassical theory.

Kirzner's conception of entrepreneurship encompasses Schumpeter's but he considers it entrepreneurial activity whenever a market participant recognises that in doing something even a little differently from what is currently being done, he might exploit a profitable opportunity. Schumpeter considers this type of essentially price competition as non-entreprenuerial and pedestrian but Kirzner is clear that:

> "the process of price competition is as entrepreneurial and dynamic as that represented by the new commodity, new technique or new type of organisation."
>
> (Kirzner 1973 p.129.)

But again it clearly implies that entrepreneurial activity cannot be defined simply by entry. Entrepreneurial activity is the 'alertness' and searching behaviour which continues whether or not opportunities are found to exist.

Oxenfeldt' s definition, based on the units which entrepreneurs initiate, contrasts sharply with that of Casson (1982):

> ".... functional definition of entrepreneurship.... essentially institution free; it describes a function which is, in principle,

performed in all societies by men whose judgement differs from the norm."

(Casson 1982 p.348.)

Casson does not primarily identify the entrepreneurs or the business units with which they are involved. He identifies the function of entrepreneurship and uses this to develop who entrepreneurs might be and within what type of business units their activity takes place. The founding of a new firm is not in Casson's theory the only evidence of entrepreneurship. The theory represents the judgement that a recognised entrepreneurial opportunity is best exploited through self-employment. Casson suggests at least five alternatives to exploitation of the opportunity through self-employment, although for many opportunities these alternatives are not viable. What is clear, however, from Casson's theory, is that new firm formation is only one result of entrepreneurial activity and to understand new firm formation we must first have a theory of the function of entrepreneurship.

Schultz's (1980) concept of entrepreneurship is also clearly much wider than new firm formation. He suggests entrepreneurship as being action to restore equilibrium. Not only businessmen but also labourers, students, housewives, consumers and farmers may be entrepreneurs at some point in the life-cycle (Schultz 1980 p.437.).This view gives to entrepreneurship a potentially very extensive role. Schultz is in fact defining as entrepreneurship

much of the allocative activity of the market system which in traditional economic theory is ascribed to the invisible hand or the Walrasian auctioneer. Entrepreneurship becomes, in this view, the very operation of the market system. Entrepreneurship ensures the efficient allocation of resources and the elimination of disequilibria.It thus becomes identified as a process, as pervasive as the invisible hand and perhaps as nebulous. While new firm formation is a tangible result of entrepreneurial activity, the above theory suggests that entrepreneurship might also encompass behind the scenes activity, the results of which might not be clearly identifiable as entrepreneurial. Schultz (1980) for example suggests labourers, students, housewives, consumers, farmers will all respond to the changing value of their time by reallocating their labour resource to regain equilibrium. This activity will not be obviously entrepreneurial because it is indistinguishable from the working of the competitive market process.

This view of entrepreneurship is a potentially rich one. A major criticism of neoclassical equilibrium economics is that it does not model adequately the competitive market process. The invisible hand or the Walrasian auctioneer are explanations of the 'black box' variety. The broader role attributed to entrepreneurship in the previous section suggests that it describes how resources are allocated efficiently which is in economic terms the competitive market process as described in Kirzner's theory of entrepreneurship.

Any detailed study of new firm formation or entrepreneurship will almost certainly arrive eventually at the Austrian approach to economic theory. The neoclassical models deny the entrepreneur any discretionary role which is in complete contrast to our entrepreneurial stereotype and the writings of economic historians. In neoclassical disequilibrium the entrepreneur merely responds automatically to external profit signals and yet empirical studies (Hamilton 1982 et.al.) find that industry profitability is not a major explanator of entrepreneurship as indicated by new firm formation. The Austrian tradition on the other hand allows the pursuit of profit as the main motivator behind entrepreneurial activity but denies that it is an automatic signal to entrepreneurs. Schumpeter emphasises the profit which entrepreneurs create for themselves by developing new products or processes. Clearly this has occurred throughout history but our knowledge of the activities of new firms suggests that Schumpeter's notion of entrepreneurship would not explain their activity. They are generally in established trades doing nothing which is obviously new. Kirzner(1973) describes entrepreneurs to be motivated by the 'smell' of profits which leads them to search for something they are not sure exists. Kirzner's conception of entrepreneurship focuses on imperfections in the market place and incomplete production functions. Entrepreneurial activity was the 'alertness' to or the 'ferreting-out' of such imperfections where resolving the imperfection or completing the production function would result in profit to the individual. Entrepreneurial activity is indicated by the discovery by an individual that doing something even slightly

differently would accrue profit to him. Profit is still identified as the motivation for entrepreneurial activity but the potential for entrepreneurial activity is unlimited and not confined to invention and innovation as in Schumpeter or industry profitability as in neoclassical theory.

Thus the Austrian school and particularly Kirzner (1973) provide a sound theoretical basis for the entrepreneur. An entrepreneur completes production functions and eliminates imperfections in the market place by exploiting them, he can also invent and innovate and respond to industry profitability. Kirzner describes his concept of entrepreneurship as alertness to information. However, although he focuses on price information, there is no reason why if entrepreneurs are 'ferreting' they should not uncover many different types of commercial information with profit potential. The theories of entrepreneurship put forward by Leibenstein (1968), Kirzner (1973), Schumpeter (1950), Casson (1982), and the neoclassical school could be interpreted in terms of the discovery of, or perception of, information. Where they differ is in the kind of information to which it is hypothesised entrepreneurs will respond. Kirzner focuses on price information, Casson on synthesised information, Leibenstein on X inefficiency, Schumpeter on new products and markets and the neoclassicists generally on industry reported profit information. In fact when analysed it becomes difficult to discern where one type of information begins and another ends. In the thesis an attempt is made to group the survey firms according to the type of information base upon which

they were established. There were difficulties in using this categorisation of dividing theories by the type of information on which firms were based. One of the firms in the survey had noticed a market gap for a cheaper version of an imported ladder-hoist. They thought they could produce a cheaper and more effective product and developed a substantially new product for which they are now developing the market. This scenario could conceivably fit Casson's synthesised information (the men were actually in roofing using a home made hoist which others admired and their engineering knowledge gave them the ability to make and cost the new product),Leibenstein's X efficiency (there was clearly a market gap serving a cheaper market among those who could not afford the expensive sophisticated foreign version) or Schumpeter's creative destruction (the ladder hoist was essentially a new product developed for a perceived market). In another case a new firm was begun by an alert employee who observed the pricing policy of his employer and considered that he could offer more competitive terms. Is this price information as in Kirzner's theory (only employees of the employer or his customer could have known the prices at which goods were being exchanged as these are not markets,in common with most manufacturing,in which there is much widely disseminated pricing information), or synthesised information, as in Casson's theory,(information assembled from pricing policy, production knowledge and customer contact), or is it X inefficiency following Leibenstein in which an employee exploits his employer's inefficiency or slack.

1.2 Entrepreneurship: Equilibrating Or Disequilibrating:

Although it is suggested above that the theories differ only in their specification of the type of information to which entrepreneurs are hypothesised to respond, one major difference which cannot be so easily eliminated is the equilibrating nature of Kirzner's, and perhaps Leibenstein's, models as against the disequilibrting nature of particularly Schumpeter's model. The difference could be potentially significant when attempting to define a single entrepreneurial role in the economy. Kirzner's model has been criticised because eventually it will "run down" as the agents discover all there is to know (Littlechild 1978 p.7), that is Kirzner's theory is fundamentally equilibrating. Schumpeter's entrepreneur, on the other hand, by introducing a new product or process into the economic system destroys the existing equilibrium or at least throws the system off its present equilibrium course.Kirzner (in Rizzo 1979 p.44) answers the criticism (Leibenstein in Rizzo 1979 Chapter 6) that in his theory entrepreneurial activity is always equilibrating. He believes that what is important:

> "is not so much that entrepreneurship is equilibrating (if indeed it always is) but that, if there is in fact a tendency towards equilibrium, that tendency can be understood as a result of working out entrepreneurial activity."
>
> (Kirzner in Rizzo 1979 p.144).

In the thesis this is interpreted as a tendency towards equilibrium may come about as a result of entrepreneurial activity and further this does not exclude the possibility that entrepreneurial activity can be disequilibrating. The conclusion is that entrepreneurial activity can be both equilibrating and disequilibrating - which however by implying that it must be one or the other maintains the importance of equilibrium as a concept and reference point.

It appears that it is the nature of information (as the basis of the theory of entrepreneurship) which is at the heart of the eqilibrating / disequilibrating debate. Kirzner's 'alertness' implies differential access to and/or perception of information as does Casson's(1982 p117) concept of privileged information. Entrepreneurial action always brings into the productive process something which previously was not included whether it is a new product, as in Schumpeter, or market activity to exploit price differentials. Kirzner suggests this activity is equilibrating when the entrepreneurial action is to exploit some information or opportunity which previously existed but was not seen:

> ".... the crucial element in entrepreneurship is the ability to see unexploited opportunities whose prior existence meant that the initial eveness of the circular flow was illusory - that far from being in a state of equilibrium it represented a situation of disequilibrium inevitably destined to be disrupted."
>
> (Kirzner 1973 p.127.)

If the 'circular flow is even' this presupposes the system to be in equilibrium. The concept of an illusory equilibrium is an uncomfortable one since equilibrium is by definition attained when the circular flow of income is steady. What,for example, causes the interruption of an illusory equilibrium? If interuption is attributed to an increase in 'entrepreneurial alertness' then in effect the total resources of the economic system have been increased and the system must attain a new equilibrium consistent with the new allocation of resources, which in turn presupposes that it must go through a disequilibration phase.

The notion of information (incorporating the mechanics of its generation and dissemination) challenge traditional conceptions of equilibrium and disequilibrium. It is problematic to analyse where one ends and the other begins. The difficulty stems from the fact that it is acknowledged that something - information - can exist without being perceived. When it is exploited this is because it has been perceived, not because it is new information. Whether entrepreneurship is equilibrating or disequilibrating will depend on how existence is defined. For example, at any point in time the list of production techniques available in a particular area will be 'fuzzy'. Some will be potentially usable but at what point of adoption of a technique do users stop being innovators (and hence their activity disequilibrating) and become imitators (and hence their activity equilibrating) by perceiving an existing technique.

Littlechild (in Rizzo 1979 p.40) in attempting to resolve the equilibrating/disequilibrating debate, suggests that Kirzner' s (equilibrating) theory of entrepreneurship deals with the discovery and spread of existing knowledge techniques and products while Shackle's (disequilibrating) theory of imagination deals with the creation of new knowledge; with invention of new processes and products.

1.3 Conclusion:

The first part of the chapter indicated a very broad and important role for entrepreneurial activity. Entrepreneurial activity was found to describe the competitive market process. It replaced the invisible hand and the Walrasian auctioneer. Entrepreneurial activity described the 'alertness' and 'ferreting' of individuals to perceive or discover previously unexploited, profitable commercial information. In exploiting this information for profit, the entrepreneurs offer attractive terms in the market thereby pushing all market participants, through competition, closer to the limits of their ability to participate gainfully in the market. This perspective of the entrepreneurial function is a potentially unifying one. Schumpeter, for example, would describe his concept of entrepreneurship as being similarly of the essence of the competitive process. For him the important type of competition comes from:

"the new commodity, the new technology, the new source of supply,

the new type of organisation."

(Schumpeter 1976 p.84.)

The threat posed to existing producers by the possibility of entrepreneurs introducing new commodities or technologies ensures, in Schumpeter's system, the efficiency of the market economy. Thus both Schumpeter and Kirzner appear to attribute a similar role to entrepreneurial activity, which is not dissimilar either to the pool of potential entrants which forms a threat in the standard perfect competition model and ensures the efficiency of the established producers.

However, while it is possible to specify a single entrepreneurial role the field remains divided by the equilibrating/disequilibrating debate. It has been suggested that it is the nature of information as a commodity which largely contributes to the divide. The equilibrium framework is a constraining one for the entrepreneurial activity described in the chapter. Entrepreneurial activity is continuous since it is in fact the competitive market functioning. It also promotes change since if it does not involve new information it involves the new perception of existing information. The orthodox model of competition works with comparative statics but entrepreneurial activity is the process of change and explaining it in orthodox terms would require explaining how the orthodox model tracks a moving target, which orthodox theory has not yet accomplished.

A theory of change rather than one of equilibrium/disequilibrium offers more scope to explain entrepreneurship. Evolutionary theorists are in the forefront of developing theories of change.It provides the alternative theoretical perspective which it was suggested in the introduction may be demanded by an analysis based on such a 'peculiar commodity' as information.

The evolutionary framework is Austrian in nature - Nelson and Winter (1982) describe their evolutionary theory of economic change as neo-Schumpeterian - which explains why it has much in common with the information theory of entrepreneurship of Kirzner and Casson et.al. and developed in the thesis. The evolutionary theory is explicitly about change and change is the essence of entrepreneurial activity. It offers an alternative to comparative statics to explain the progress of the economic system. Eschewing the concept of equilibrium altogether, the evolutionary theory models the process of progress in the economic system and parallels Kirzner's modeling of the competitive process as being entrepreneurship. The evolutionary theory of economic change has more in common with Schumpeter's concept of entrepreneurship than Kirzner's but this chapter has described that difference as one of degree rather than kind. Thus the evolutionary theory of economic change also has much in common with a theory of entrepreneurship based on Kirzner's (1973) alertness to information which has previously gone unnoticed. The dynamics of Nelson and Winter's evolutionary theory are guided by information flows -information about new scientific developments, information regarding the

success or failure of R and D projects, information regarding costs, markets, profits :

> "New information and economic change are integral. The information is about change. In turn the information guides change, which provides new information, which stimulates and molds the next round of change."
>
> (Nelson and Winter 1982 p.365.)

Thus an understanding of information generation and information dissemination and flows should lead to an understanding of entrepreneurship and economic change. The problem with Austrian theories of entrepreneurship - which possibly holds also for evolutionary theories of economic change - is that while conceptually rich and theoretically plausible they are inherently non-predictive and untestable. The following chapter developes the concepts of information and knowledge in economics in an attempt to develop some testable, if not predictive, postulates of the Austrian and neo-Austrian theories of entrereneurship focused on in this chapter.

CHAPTER 2

MAEUTICS, INFORMATION ECONOMICS AND NEW FIRM FORMATION

The previous chapter attempted to make a first link between entrepreneurial activity and the generation and dissemination of information. The chapter begins by examining the process whereby 'business ideas' emerge - the maieutics of privileged information. But new firm formation is only one outcome of entrepreneurial activity.The idea developed is that only certain types of information provide a stimulus to new firm formation (through the incentive of profit). The nature of individuals information field and the generation and dissemination of information are explored for their implications for entrepreneurship and new firm formation. Specifically it suggests the type of information with profit potential which might be available to individuals as potential new firm founders.

The chapter concludes with an important section based on uncertainty, on the implications of the 'exclusive information' theory of entrepreneurship for survival and failure rates among new entrants . This particular development suggested that the theory if not predictive might be at least testable retrodictively.

2.0 The Paradox Of Knowledge:

If entrepreneurship models the competitive process then, like the competitive process, it is not discrete but continual and continuous. Kirzner is very clear on what this continual and continuous entrepreneurial activity is. He describes the entrepreneurial activity which he thinks to be very widespread in terms of:

> ".... alertness to information rather then its possession."
>
> Kirzner 1973 p.68.

Entrepreneurs are those who are alert to information. They may not have potentially exploitable information at a particular point in time. The possession of substantive information is not what defines an entrepreneur. Entrepreneurs are distinguished by their ability to know where to look for information. It is the knowledge of where to look which Kirzner describes as alertness:

> "the kind of 'knowledge' required for entrepreneurship is knowing where to look for knowledge'."
>
> (Kirzner 1973 p.68.)

Alertness to information and actually searching for information are the essence of entrepreneurial activity. Forming new firms, investing finance and taking risks are not.

The 'alertness' is pervasive throughout the economic system and is motivated by what Kirzner (1973 p.229) calls the 'smell' of profits.Profit potential explains why entrepreneurs search for something they are not sure exists. Search in orthodox economic theory proceeds on the basis of an estimate of the costs and benefits from doing so. But if all knowledge and information is deliberately sought according to some calculation of the expected costs and benefits from the search then :

> ".... the theory of search cannot .... avoid making the assumption that, before undertaking the search one already knows enough about the territory to be able to calculate rewards and costs
>
> (Kirzner 1979 p.142.)

Both Shackle (1969) and Boulding (1968) have pointed out this paradox:

> ".... implicit in the very concept of knowledge is that we have to know what we want to know before we can start looking for it."
>
> (Boulding 1968 p.146.)

What is necessary is something prior to search which prompts search and which is not based on a calculation of costs and returns. Kirzner (1979) suggests that the answer is to

acknowledge that action can be inspired by knowledge or information spontaneously acquired or discovered:

> ".... a very great volume of one's awareness of one's environment and of one's expectations concerning the future is the result of learning experiences that occurred entirely without being planned."
>
> (Kirzner 1979 p.142.)

Not all knowledge in this view is deliberately sought. Search, which is the deliberate seeking out of information, would be prompted and directed by spontaneously discovered information. Information, costlessly available, should in orthodox theory be assimilated. Information not costlessly available will be sought if the calculation of benefit outweighs the costs. But all information in this scenario is deliberately sought. Kirzner, on the other hand, uses spontaneous absorption to explain why costlessly available information can remain unlearned:

> "Ignorance of knowledge that can be absorbed without decision is simply the expression and the evidence of a sheer failure to notice what is there to be seen. It can be given a name - lack of entrepreneurial alertness - but it cannot be explained in terms of the standard economics of microtheory, the theory of deliberate individual decisions."
>
> (Kirzner 1979 p.145.)

Entrepreneurial alertness explains why some individuals perceive costlessly available information while others don't and thus why the number of new firms formed is not even greater than it is. Alertness also explains why the numbers of individuals who perceive costlessly available information increases over time because one can:

> "as time flows on men are subject to a spontaneously increasing awareness of information hitherto veiled in ignorance."
>
> (Kirzner 1979 p.146.)

2.1 From Alertness To Action:

2.1.1 Expectations And Imagination:

Spontaneous absorption resolves to a large extent the 'paradox of knowledge' (see Sect.2.0). The idea that individuals possess knowledge which they did not deliberately search for explains how the individual is able to form expectations about the benefits from search and to direct search activity.

However, the traditional treatment of expectations in economics may be inappropriate for application to the expectations regarding the existence and nature of entrepreneurial opportunities.

Expectations as traditionally styled in economics refers to the probabilities of occurrence of a 'predefined set of entities' (Littlechild in Rizzo 1979 p.34). Expectations are thus a way of dealing with uncertainty regarding future world states. The implication is, however, as Shackle points out that:

> "uncertainty conveys the suggestion that there is a determinate future, pre-existing choice and independent of it, needing only to be found out."
>
> (Shackle in Rizzo 1979 p.27)

There are two problems with the view of expectations in entrepreneurship theory:

1. A main source of uncertainty among potential new firm founders is ignorance of others' plans. This uncertainty will only be resolved and can only be resolved by the participation in the market of the potential new firm founders. But the implication of this type of uncertainty is that it cannot be regarded as a truth only needing to be found out. It will be created by and will only occur as a result of the activity of new firm founders. A related point is that if entrepreneurship is part of an evolutionary process, failure of a new firm is not accurately described by simply stating that the founder was wrong in his expectations. Failure of some units is a corollary of evolution. This point is developed in a later section.

2.A second problem with the traditional view of expectations vis-a-vis entrepreneurship is that it ignores the creative element in entrepreneurial activity. The supply of entrepreneurs is not dependent solely upon signals from the economy. By their activity enterpreneurs actually create the future. This view of entrepreneurship is particularly important to effect progress and change in the evolutionary framework.

This final point highlights particularly serious shortcoming in the traditional expectations theory and would appear to exclude Schumpeterian-type entrepreneurship .An alternative view of expectations is provided by Shackle (1970). Expectations, he states, will be formed not by extrapolating the present into the future but by the exercise of imagination to construct a possible future. This is not to be confused with fantasising about the future:

"Fantasy: preoccupation with thoughts associated with unobtainable desires."

(Chambers 20th Century Dictionary p.473.)

Expectations are defined by an individual's imagined projection into the future based on

"his knowledge or belief about his own resources, the nature of the world, the likely actions of others."

(Littlechild in Rizzo 1979 p.30).

and

"Imagination constrained to congruity with what seems in some degree possible we shall call expectation."

(Shackle 1970 p.13).

Differences in imaginative capabilities can explain why expectations about profit from opportunities differ between individuals and hence why all individuals who perceive the same information do not hold the same expectations about it. The information comes in a general form and requires the exercise of imagination for its profit potential/ expectation.

2.1.2 Search:

Search is the third and last stage between entrepreneurial activity and actual action i.e. new firm formation. Alertness is the initial part of entrepreneurial activity because it indicates the ability to spontaneously absorb information which logically must precede the exercise of imagination. But neither of these elements of entrepreneurial activity preclude search as a strategy to deliberately gather information. The idea of spontaneous absorption of knowledge does not preclude search. Kirzner (1973 p.144) himself pointed out that having recognised the existence of information absorbed without being deliberately sought, we must avoid thinking that all action is inspired by this type of information. The concept of spontaneous absorption is most useful

because it explains how 'search' is prompted and directed. Individuals and no less entrepreneurs will attempt to become as completely informed as is profitable. Search activity will 'firm-up' the estimate of profit which prompted search. Entrepreneurial opportunity information is highly specific and detailed concerning the 'fine structure' (Lindbeck 1980) of production and implies that entrepreneurs will require additional and more detailed information than that spontaneously absorbed.The extent of the spontaneously absorbed information it is postulated would seldom be sufficient to prompt action.

The thesis draws on the concepts of imagination and search primarily to describe an adequate theory of human action. A theory of entrepreneurship must implicitly contain a theory of human action. The concept of alertness on its own is inadequate to explain new firm formation. 'Alertness' is a pre-requisite to spontaneous absorption. 'Imagination' then works on the knowledge spontaneously absorbed to formulate expectations about potentially profitable opportunities. An individual uses his imagination "to generate new choice situations" (Littlechild in Rizzo 1979 p.37). Alert individuals will perceive more of the costlessly available information. Alert and imaginative individuals will perceive or construct more 'new choice situations' for themselves. This process is highly individual:

"The future is imagined each man for himself and this process of imagination is a vital part of the decision process."

(Shackle 1972 p.3.)

Some of the 'new choice situations', potentially profitable, will be through search for further formation to a firm expectation of profit on which the individual will make his decision. The act of imagination is a basic part of the creation of or realisation that an opportunity exists: "an element of imagination is inherent in entrepreneurship", and progresses the entrepreneur towards action.

Without the concept of imagination as an element of the theory of entrepreneurship we could not explain why all individuals who spontaneously absorb the same information do not come to the same conclusions. Imagination is essentially about human action because it explains why not all alert individuals who absorb the same costlessly available information perceive it the same way and thus why their subsequent actions differ. The concept of imagination confirms what might be suspected that the same information will not have equal meaning to all individuals. Some individuals will be better placed by experience or ability to assess the significance of the information. Since the information does not come ready styled as a profit opportunity it requires to be interpreted. The facility of the human mind which would carry out the interpretation and the formulation of the information into its profit mode might as well be called imagination. It cannot be anything less since extrapolating into the future to the exploitation of the commercial information to establish the

expectation of profit requires specification in the mind of a state not yet real. It requires specifying the elements necessary to exploit the information as well as the information itself. It requires imagination for the entrepreneur to project himself into the self-employment situation.

If information has to be interpreted, developed or synthesised, then the act of perceiving information would not be sufficient to ensure action. It would not be sufficient to estimate the amount of profit potential. The entrepreneur also has to exercise his imagination :

> "in other words, the raw material for expectations is provided not by the world directly, but by imagination at work in the world."
>
> (Littlechild in Rizzo 1979 p.36.)

The formation of expectations facilitated by the use of imagination is an important step in the analysis from entrepreneurial alertness to new firm formation. It explains why all who are alert to and absorb the same costlessly available information do not then form profit expectations on which they might found a new firm. 'Imagination' explains why there are not even more new firms. As Littlechild points out (with a different point in mind) it is by expunging imagination from entrepreneurship that a better appreciation of the need to

incorporate it is gained. In the present context it helps to explain the limited number of new firm formations.

2.2 Limits To Individuals' Entrepreneurial Activity:

The previous section has described a theory of entrepreneurial action. It relies on the concepts of spontaneous absorption, imagination and search to translate entrepreneurial alertness into entrepreneurial action. Each of these concepts in turn indicates some limits to the entrepreneurial activity of individuals.

2.2.1 Limits To Spontaneous Absorption:

Spontaneous absorption occurs without deliberate action on the part of the individual. It must happen, therefore, as a by-product of his day-to-day activity and the kind of information to which he is exposed. This will indicate what is available to an entrepreneur out of which to 'construct' or 'imagine' entrepreneurial opportunities. Kirzner himself admits that we know very little about the process of spontaneous discovery of information. He suggests that advertising executives possibly understand more than most about it since ideally they will not just lower the cost to the consumer of learning the message they wish to project but will aim for spontaneous absorption at zero cost to the individual.For instance slogans and jingles attempt to arrest the individual's attention by 'tapping' an existing framework of knowledge and tagging onto this the information which

the advertiser desires to be absorbed.For example an advertising message set to popular music. The individual as Kirzner himself suggests will be more alert to information which is likely to benefit him which in turn suggests that information which adds to or draws on the individual's existing knowledge base will be most likely to be spontaneously absorbed.

The literature on innovation diffusion indirectly provides some evidence of the importance of drawing on an individual's existing knowledge framework in order to impart new information and thus implicitly about the importance of spontaneously absorbed information. Particularly where innovation is concerned it is theoretically difficult to explain why individuals should undertake to search for that which they do not know exists. And if individuals do not search for potentially relevant innovations then the only way the information about the innovation can disseminate is by spontaneous absorption which in turn implies that the information must be encountered in the course of an individual's normal activity. Hagerstrand (1953) in a study of central Sweden noticed that persons who adopted an innovation in one time period tended to be located close to people
who had adopted the innovation in an earlier time period. Hagerstrand suggested that this effect develops because innovations diffuse through an area by personal communication. Pred (1967) had a similar concept of ' Specialised Visual Information' predicting similar results to Hagerstrand. Both concepts suggest that individuals are not looking for the

information but that individuals' experience the information personally and in Pred's view often visually.

Thwaites and Gillespie (1983) also found a pattern in the spatial distribution and the incorporation of technological developments consistent with the importance of face-to-face contact in the dissemination and absorption of information. The information rich south-east has incorporated technological developments to a greater degree than peripheral areas. Information generated in the south east encounters barriers to its dissemination to more diverse regions. Thwaites and Gillespie suggest that the relatively low take-up in these outlying regions of new telecommunication-based methods of information communication is partly to blame. But they also develop the idea of the importance in communicating information of bringing the technology to the 'factory gates'. Regional Technology Centres would specialise in applying knowledge to the industrial base of the locality:

> "in other words in the field of information transfer it is the delivery system which becomes all important."
>
> (Thwaites and Gillespie 1983 p.15.)

This is a policy development consistent with Hagerstrand's observation that information is disseminated and learned by visual observation, personal communication and imitation and Kirzner's conception of spontaneous absorption of knowledge and information.

Technology Centres would bring into the field of alertness of individuals new techniques and processes which they didn't know existed and thus had no reason to search for. If this is the way in which the adoption of new techniques spreads there are bound to be discontinuities in their dissemination to and adoption in the regions from the 'information rich south'. The Regional Technology Centres by providing a forum for technology in action bridges this perception gap and reduces the technological time lag between the south-east and the rest of Britain.[1] Implicit in the Regional Technology Centre idea is Kirzner's postulate that it is not enough to ensure access to information - in Thwaites and Gillespie's (opp.cit) terms providing telecommunications links - it is also necessary to present information in context to facilitate spontaneous absorption.

The importance of personal communication and visual experience in spontaneous absorption suggests that the mass media is not the source of the information most influential to individual action. This is plausible for at least two reasons:

1. Information collected by an individual in his sphere of operation is more likely to be relevant and timely. Information observed or collected at work is more likely to be relevant to an individuals skills and interests. He is more likely to understand the significance of information he perceives and any profit potential it has.

2. Information observed in context e.g. the work environment may suggest ways in which the information may be exploited e.g. buying machinery from your employer to carry on a line of work he is dropping as opposed to reading about new technological development.The latter demands more imagination to realise its potential..

The requirements of the process of spontaneous absorption indicate that the information absorbed will be 'close to home' in all senses. It will be absorbed from the individual's own physical environment and will also be relevant to his past experience and existing knowledge framework .

2.2.2 Limits To Imagination:

The introduction of 'imagination' into the theory of human action makes it even more difficult to predict the outcome from entrepreneurial activity. The previous section indicated the nature of information which could be sponteneously absorbed. It would seem impossible to indicate similar limits to the product of imagination working on the spontaneously absorbed information. The results of exercising imagination are potentially unlimited. But as was pointed out earlier (Section 2.1.1))the imagined projection into the future by an individual will be based on and by implication limited by:

"his knowledge or belief about his own resources, the nature

of the world, the likely actions of others."

(Littlechild in Rizzo 1979 p.30.)

And certainly expectations and, therefore, action are based on "imagination constrained to congruity with what seems possible" (Shackle 1969 p.13). The results of the exercise of imagination, although creative rather than determined (Shackle 1966 p.13) are limited, limited primarily by the nature of the spontaneously absorbed information which prompts the exercise of imagination which in turn will be limited by what seems possible.

2.2.3 Limits To Search:

Spontaneous absorption is the starting point for the search process. The exercise of imagination will specify the 'business idea' but further search is likely to be necessary to confirm or deny the possibility of profit. As Kirzner pointed out in removing the error that all action is inspired by knowledge deliberately acquired we must not tend to the opposite extreme of suggesting that action will be inspired exclusively by spontaneously acquired information (Kirzner 1979 p.144).

While search activity by individuals will be prompted by spontaneous absorption and the exercise of imagination (spontaneous absorption was Kirzner's means of resolving the Paradox of Knowledge, see Section 2.0 above), Nelson and Winter

(1982) have pointed out that some firms institutionalise some forms of search. Research and development is a routine activity in all the largest firms and government although the direction and strategy of this type of search is for the most part complex and highly confidential.

The cost of search activity to the individual indicates some limitations to the extent to which search will be undertaken. Individuals in full-time employment will not be able to search outside of their own environment while those not in full-time employment will have a lower opportunity cost of their time. Nelson and Winter (1982) suggest that the intensity of search will be increased by adversity, the perception of problems or 'exceptions'. That search might be stimulated by adversity or problems is appealing given the empirical finding of a correlation between rising unemployment and new firm formation. Firms would simply increase their R. & D. activities. But the spontaneous absorption or alertness of individuals will be similarly increased by adversity, problems and exceptions. As Kirzner (1979) points out while we know little about the process of spontaneous absorption, it could be postulated that individuals will be more alert when they stand to benefit as would be the case if adverse conditions, e.g. unemployment or other problems were encountered.

However, the heightened alertness (or most intense search) will be thwarted if the adverse situation does not give rise to opportunities which can be found. Large firms and governments can

intensify their 'institutionalised' search by putting more resources into their research end development activities. Clearly they are generating information in their search processes. For the individual potential new firm founder who is unlikely to be engaging in R. & D. in his own behalf:

> "What there is to be found consists in large part of the fruits, by-products and residues of information producing activities elsewhere in society."
>
> (Nelson and Winter 1982 p.172.)

The implication is that the kind of information which individuals will discover will comprise (at least partly) of that discarded by its original 'owners'. While it is difficult to maintain information as a purely private good, the government through patents and copy-right, has assigned certain property rights to those who generate some types of information. This ensures that what individuals have access to is discarded private information. That the quality of this information is lower is suggested by Oxenfeldt. He postulated that new products, new processes or new methods of production will be exploited by the expansion or extension of established businesses if their profit potential is high enough to tempt these firms. Individuals, on the other hand, may respond to a level of profit which would not be sufficient to persuade an established business to expand (Oxenfeldt 1943). However, search may be limited to the individual's own environment for at least one other reason. Information must not just be

accessible, the possibility of learning it must also be perceived (Kirzner 1973 p.227).It is not even enough to perceive information e.g.the collapse of several ferrous metal foundries,the significance and potential of the information must also be perceived. Burton makes essentially this point:

> "the assessment of an enterprise's potential is not simply a matter of acquaintances with its accounts and a few other quantitative indicators; the possibilities of re-organisation can best be comprehended by those who best know the particular business, its market and technological context."
>
> (Burton 1983 p.42)

The entrepreneurs who are likely to have the keenest appreciation of the possibilities for filling a gap in a declining industry or exploiting slack in an inefficient industry are likely to be already active in that industry. For this reason entrepreneurial activity is fragmented. Search activity will be confined to familiar fields. Entrepreneurs may be successful in one or two fields, they cannot be so in all.Entrepreneurship is based on highly specific and detailed knowledge of the " fine structure of production" (Lindbeck 1980) within a particular market context:

> "successful entrepreneurship is based on .... knowledge which it takes years of involvement to acquire and much of which is so specific that it is not transferable to other types of business."
>
> (Burton 1983 p.42.)

2.3 Individuals' Information Environments or 'The Field Of Opportunity':

The implication of the foregoing sections is that the 'field of opportunity' is actually highly fragmented with individuals' alertness employed over a limited area, geographically and sectorally. An opportunity is likely to be trade and area specific accessible most readily to individuals working in that trade or geographical area. Superimposing on this the effect of personality and past experience on the perception or spontaneous absorption of information the result is a highly fragmented information field. Pred (1967) summarises the outcome:

> ".... unique private information fields in combination with unique personalities lead to unique sampling of the information environment."
>
> (Pred 1967 p.34.)

Pred's analysis of information is quite consistent with Kirzner's idea of spontaneous absorption. Alertness both in degree and direction will be influenced by past experience, personality and the size and diversity of an individual's normal sphere of operation. Casson (1982) seemed to have the fragmentation of the market in mind when he wrote :

> "there is not just one market for entrepreneurs: there are as many different markets as there are judgemental decisions to

be made."

(Casson 1982 p.331.)

Casson' s theory is also based on differential perception of and access to information but he describes it in terms of judgemental decisions. The above quote indicates Casson's view of the total lack of substitutability of entrepreneurs. Each entrepreneur is ideally suited to take one decision by virtue of his particular information field.[2] Neoclassical market theory by contrast would require that anyone identified as an entrepreneur could make any judgemental decision with equal success. The argument in this section of the thesis concerns the fragmentation of entrepreneurial activity, individuals identified as entrepreneurs effectively able to police only their own environment for opportunities.

2.4 Monopoly In The Information Market:

Implicit in the theory of entrepreneurship based on knowledge and information is that perfect knowledge doesn't exist. If there were perfect knowledge there would be no role for entrepreneurial activity.A corollary of this is that the less perfect our knowledge the more important is entrepreneurial activity in ensuring efficiency in a market economy. A further implication is that it is only the perception of, or at least a degree of monopoly of some information which gives it profit potential.

Information deemed to be widely known will not have profit potential to any single individual. Because it is widely known no individual will imagine that he alone will be able to realise the information' s profit potential since an unknown, but large, number of others may also act to exploit the information. Kirzner was explicit about the importance of monopoly in the information market:

> "once a profit opportunity has become obvious it no longer retains its character of a pure profit opportunity."
>
> (Kirzner in Rizzo 1979.)

The entrepreneurial role is one of ' sniffing out ' opportunities that on the surface do not appear to exist. The perception that an individual is 'first in the field' is what indicates to an entrepreneur that the information in his possession has profit potential. What an alert individual values is a temporary monopoly of information about a profit opportunity which he can exploit either by being first in a 'one-off' situation or by using the temporary monopoly of information to become established and invest in barriers to consolidate his monopoly situation .

Monopoly power in the invention and innovation fields occurs naturally initially, if it was not then protected, the monopoly would be quickly eliminated by imitation. It has long been recognised that there are advantages in assigning property rights to information. The generation and innovation of information in

the form of new products and processes is encouraged by legislation that limits the rights of exploitation of such information to those who have paid for its generation. The stimulus which protection gives the invention and innovation has been used to justify the departure from the tenets of perfect competition which patent law represents. Sacrificing short-run efficiency for the longer term benefits derived from progress in products and techniques. Many who disapprove of monopoly generally would support this argument and the rationale for patents and copy-rights. Monopoly is often acceptable if it is interpreted as allowing a return to individuals and companies who will provide 'fuel for the capitalist engine'.

However, in terms of the new firms being examined in this thesis, the monopoly model of information generation and dissemination also has relevance. The perspective that it is the monopoly of an item of information which stimulates an entrepreneurial response applies to information at all levels of the economy. Entrepreneurial responses are dependent on the existence of monopoly power in the information market, and particularly in the Austrian view the efficiency of the economy and its movement towards equilibrium is dependent on entrepreneurial perception of and response to information. Monopoly power then becomes the basis for efficiency in the form of entrepreneurial response. Entrepreneurial response is defined as the action of alert individuals in response to basically commercial information perceived to have profit potential.

The dilemma posed for economic theory is that in a predominantly market organised economy:

"..... it is efficient to make available information public but the existence of private incentives for information gathering often requires that the information be private."

(Nelson and Winter 1982 p.365.)

The efficiency conditions for a public good such as information require that once the cost of generating it has been incurred it should be made available at zero price[3]. But as Nelson and Winter (1982) point out, if this is to be the case then individuals will have no incentive to generate or seek new information. It is ironic that the efficiency of perfect competition is at least partly dependent on the existence of a degree of monopoly in the information market. It could be argued that socialist economies, where information generation and dissemination is a centralised activity, are efficient in a narrow sense. But the centralised information systems of such economies cannot replicate the information generation and dissemination system carried out by entrepreneurs motivated by profit and self interest. Entrepreneurs 'ferret out' highly localised information as well as acting creatively on the information they discover. In the socialist economy there is no incentive for such alertness and

even if individuals did report the kind of information which entrepreneurs discover in the market system it is likely that the information flow would overwhelm the centralised system.

But does this exaggerate the importance of the entrepreneur to the efficiency of the economy? How freely does information disseminate and circulate? Could government take a role in generating and disseminating information thus reducing the reliance of the economy on a monopolistic market?

Broaching the second question first it has already been discussed that it is the perception of a degree of monopoly in the possession of some commercially exploitable information which signals to an individual that, ceteris paribus, he can realise that profit. If the government announces or otherwise chooses to make information more widely known in terms of the analysis above, the question arises as to who would exploit information of which it is perceived no individual can have a monopoly.

The contribution of the entrepreneur to economic efficiency can be estimated by examining the extent to which information can be deemed to circulate freely. The less production and market information is freely available the greater is the role of the entrepreneur in 'ferreting out' information about market gaps and production opportunities. Contrary to the assumption of perfect competition where all the necessary information is circulated via the price system, close knit industrial areas such as Birmingham

and the Black Country appear to thrive on secrecy. The labyrinth of contractors, sub-contractors and sub-contractors' sub-cont=actors places a premium on information about customers and 'where work is' rather than on prices. The actual production of tools, components, castings etc. is so fragmented that even those in the trade have little substantive information about different firms capabilities, specialities and state of their order books. Tactics such as following delivery lorries leaving a competitor's premises or visiting a competitor's premises to scan their work-in-progress for indications of where it might have come from indicate the extent of secrecy and the lack of information and also indicate how useful such information would be to those in the same field.

The necessity of an initial monopoly position to precipitate entrepreneurial action has a further implication for the exploitation of exclusive or privileged information. Since information has to be exploited while it is 'new' in the above sense, it is likely that it will be exploited by an individual(s) very close to the source from which it eminates. The closer an individual is to the source of the information to be exploited, the greater is its exclusivity (actual and perceived) and hence profit potential. Consequently there is a high probability that an individual will find it worthwhile to attempt to realise the profit. The necessity of preserving exclusivity or newness also indicates that the information will be exploited quickly. While information generally is a public good (its consumption by one

individual does not preclude its consumption by another) new information is a purely private good which as it disseminates ceases to exist as a private good. That more individuals will become aware of a particular opportunity over time was suggested by Kirzner. Where:

> "one can assume a tendency to become aware of opportunities that do stare one in the face .... as time flows on, men are subject to a spontaneously increasing awareness of information hitherto veiled in ignorance."
>
> (Kirzner 1979 p.146.)

Thus the optimal course for an individual in possession of information he considers commercially exploitable is to act quickly since its exclusiveness and hence profit potential will diminish steadily over time as more individuals become aware of it.

This finding, that the entrepreneurial role revolves around the perception of monopoly power, may be disconcerting in terms of the tenets of neoclassical equilibrium which postulates maximum welfare as the result of perfect competition. But it is unlikely to surprise economists who have been involved in the study of entrepreneurship. As long ago as 1943 Oxenfeldt suggested that all new firm founders thought they had a monopoly of something. Baumol (1968) quotes a private communication from Lewis:

"We have no good theory of entrepreneurship because we have no good theory of monopoly."

(Baumol 1968 p.69fn).

He remarks that the entrepreneur is doing something new and is therefore to some extent a monopolist. More recently Casson (1982) made the same point. He was quite clear that in neoclassical theory the entrepreneur appears - "if at all" - as a monopolist rather than a competitor (Casson 1982 p.12). This is most obviously true of Schumpeter's idea of an entrepreneur who is by definition doing something new introducing a new product or process. But this does not describe the activity of a large majority of new independent firms. By introducing the idea of a degree of monopoly power over information it becomes possible to explain both Schumpeter's type of entrepreneur and the stereotypical new firm founder being uncovered by more recent research.

2.5 Information For New Firm Formation:

The previous section suggested that the profit potential attaching to certain commercial information springs primarily from individuals perceived monopoly of the information. The economics of search and the necessity of spontaneous absorption to direct and motivate the search for information suggests that individuals will search only within their own sphere of operation.

This raises the question of what kind of information is described by the above limitations. It is approached theoretically with some suggestions made about the type of information which might result in new firm formation.

Both Casson (1982) and Kirzner (1973) distinguish between pure entrepreneurship which is the activity of seeking out profitable opportunities and requires no resources and entrepreneurship extended into the purchase of resources to exploit the fruits of the pure ntrepreneurial activity .

Entrepreneurship is the seeking out of information and what individuals do with the information they find provides only an indicator of entrepreneurial activity (in Chapter 1 of the thesis the following proposition was stated, the only part of entrepreneurial activity that may be measured is the part which has tangible results). Kirzner makes the point that entrepreneurial activity presumes no ability to purchase resources:

> "The firm, then, is not at all the same thing as the pure entrepreneur. It is that which results after the entrepreneur has completed some entrepreneurial decision-making."
>
> (Kirzner 1973 p.52).

Casson (1982) clearly holds the same view of entrepreneurship. Forming a new firm is only one among five main ways by which,he

suggests an entrepreneur could exploit the commercial information he has discovered. However, all the options except forming a new firm involve selling or communicating the information to others. Unfortunately "the very act of marketing information will undermine its secrecy" (Casson 1982 p.203). It will usually prove difficult or impossible to specify the information in sufficient detail to convince a potential buyer of its worth without revealing it to the extent that the buyer no longer needs to purchase it because, in fact, he is already in possession of it. Additionally because entrepreneurship is based on the 'fine structure of production' , and an 'extreme of specivity and detail in knowledge' (Lindbeck 1980), the potential market for the information is small. Again the point is that it is not enough to have access to the information, the ability to perceive and learn it must also be present. Not everyone will be able to understand the significance of or take advantage of a particular item of privileged commercial information (see Section 2.2.1 this Chapter) .

For these reasons individuals will 'internalise' the exploitation of the commercial information (Casson 1982 p.201). In other words they will acquire resources to exploit the information. Acquiring resources and control over assets is a euphemism for establishing a new firm.

This gives us a first indication of the type of privileged information which, in terms of the theory, might be used to start

a new firm.It will be information which is difficult to communicate (without complete revelation) information which is not protected by patent or copyright.Because of the legal specification of property rights, information covered by patent or copyright can be sold and bought. New products, new processes or techniques emerging from research and development will be so covered and unless potential new firm founders have large amounts of finance they will not be in a position to purchase this type of information. Even if it isn't covered by patent, or copyright information from research and development will be known first to the company who funded it. They are the first in the field and have the advantage to exploit it quickly before it becomes more widely known, which they will do if it promises sufficient profit. Only R. & D. 'cast-offs' which are not so potentially profitable might be available to individuals. Even then it is likely that the companies will want to sell the information rather than give it away, although there are examples, particularly from the electrical engineering industry, of R. & D. employees being allowed and encouraged to develop as independent businesses ideas which the company does not want to pursue. If the important element of the commercial information is the degree of monopoly in its possesion by individuals (or at least the perception by individuals of a degree of monopoly in its possesion) individuals, since they do not generally carry out R. & D. on their own behalf, will be the first to perceive the type of information which is generated at their level within the firm. For example company representatives and salesmen in touch as they

are with customers' demands will be among the first to perceive changes in demand or to spot demand which is not currently being met. In smaller firms the shop floor workers may be in a similar position, particularly if the product is such that its production requires communication between customer and workman e.g. in the toolmaking trade. In such cases the skilled workman will have information about the identity of his employer's customers and their demands and changing demands. Employees will be the first to observe information which is generated at their level of operation. They may observe 'slack' of various kinds which might not be apparent to their employer but which may provide them with an opportunity. The 'slack' might be inefficiency leading to higher costs, unmet demand or poor service.

Kirzner(1973),in describing the process of entrepreneurial competition, sets out some indicators concerning the kind of information which is the result of entrepreneurial activity (besides that in Schumpeter's dynamic type) .Kirzner describes price competition of many kinds as being part of the entrepreneurial process. Individuals in organisations may perceive a market unsatisfied or a price discrepancy or an unfulfilled demand and elsewhere an excess supply.The entrepreneur in such circumstances would use his information to buy and sell at the right prices, eliminate the disequilibria and make for himself entrepreneurial profit.

This is what Schumpeter calls price competition - the pedestrian kind of competition (pedestrian, compared to the competition provided by new products, new processes etc.). He does not consider this entrepreneurial at all. Kirzner, on the other hand, considers it entrepreneurship whenever a market participant recognises:

> "that doing something even a little different from what is currently being done may more accurately anticipate the actual opportunities available."
>
> (Kirzner 1973 p.129.)

Thus for example, Kirzner would describe as entrepreneurial the perception by an employee that the demise of his employer had left a gap which could be filled by production on a smaller scale.

The need for a degree of monopoly in the possession of entrepreneurial information and the cost of search indicate the type of information which might be available to individuals who are potential new firm founders. The type of information which was indicated resembles the sources of X inefficiency in Leibenstein's theory. By a different approach the same sources of entrepreneurial opportunities have been deduced:

> "Persistent slack implies the existence of entrepreneurial opportunities."
>
> (Leibenstein 1968 p.75.)

Detailed market knowledge - "gap filling" - is also put forward by Leibenstein as a source of entrepreneurial opportunity which is consistent with the argument developed earlier in this section that salesmen and company representatives would be in a good position to exclusively perceive market demand information. The description of entrepreneurial information is also clearly consistent with Lindbeck's (1980 p.394) view of the information required for entrepreneurship being of an "extreme micro-character and specivity" describing the "fine structure of production".

2.6 Uncertainty And New Firm Formation:

The description of the unique sampling of the information environment described in Section 2.1.2 is an extreme position. Many individuals operating in the same environmental area will possess similar information and in exercising their imaginations it will arrive at similar positions. Thus it could happen that several or more individuals could be holding the same information which all would perceive to be new inasmuch as it had not yet been exploited by anyone. But while the information is new it is not totally exclusive. Individuals will be aware that their privileged information may not be perfectly exclusive to them, that they hold only a degree of but not complete monopoly. This imperfect exclusivity imparts an important degree of uncertainty to the new

firm formation decision - uncertainty with respect to the plans of others who may also be holding the 'privileged' information.

Webber (1972) analyses the effect of uncertainty on location decisions. He suggests that firms realise that their profits will depend on the decisions of other economic operators currently considering whether and where to locate. In terms of the thesis, when the information is of a certain kind, potential exploiters of this information will appreciate that others may share their information and may act to exploit it. But they have no way of knowing for certain the plans of potential rivals, therefore, they must make their decision (whether and where to locate) under uncertainty. Webber's prediction is that there will be a conservativeness associated with such an uncertain market. He predicts that firms will delay setting up when there is uncertainty (the higher the probability that other firms are establishing, the lower is expected profitability of the location and, there fore, the greater the delay before firms locate in the market) and that their commitment to the industry will be gradual implying that firms will be smaller and relatively unspecialised when they commence operations. It has been observed that new firms are small and that machinery is relatively unspecialised in the start-up situation. However, Webber's prediction that there would also be delay in locating is not so obviously true. It would in any case be difficult to observe this delay but it is also contrary to the analysis of the previous paragraph. The necessity to have a degree of monopoly of the new information,

the advantage gained from being 'first in the field' indicated not only that information would be exploited close to source but that it would be exploited quickly as exclusivity would diminish with time. The implication of Webber's delay is that by delay the uncertainty facing the firm will somehow be resolved. That is, that by delaying the firm will gather more information to enable it to make a better decision. But on the 'exclusive information' theory of entrepreneurship delay would dissipate any advantage the potential founder had. Uncertainty would only be resolved by delay by the potential founder relinquishing the opportunity to exploit the information. By delaying he is in fact standing back and watching others resolve the uncertainty for him by their own exploitation of the information. Alternatively if all potential founders delay uncertainty will not decrease but will increase as over time the information becomes less and less exclusive due to it being eventually perceived by other individuals. As Kirzner points out:

> "as time flows on, men are subject to a spontaneously increasing awareness of information, hitherto veiled in ignorance."
>
> (Kirzner 1979 p.14)

so that:

> ".... an item of information that was staring one in the face yesterday, but in some unexplained way remained unnoticed, need not necessarily remain unnoticed today .... one can assume a

tendency to become aware of opportunities that do stare one in the face."

(Kirzner 1979 p. 14)

The numbers of individuals who perceive costlessly available information increases over time.

There is no rationale in this theory for delay. Delay will not resolve uncertainty. Only action to exploit the information will resolve the uncertainty by revealing the number of actors who shared the information. That is, entrepreneurial action generates important information which cannot be known otherwise by any single individual.

2.7 Quality Of Information:

The uncertainty arises because the information is such that an individual who possesses it cannot be sure that it is exclusive to them. They perceive the information to have profit potential but the situation in which they have perceived it indicates to them that they are possibly not alone in their perception. The perception of this information will not necessarily be unique thus exclusivity becomes a matter of degree. In terms of information theory we can introduce the concept of quality of information to encompass the effect of exclusivity. More exclusive information would be considered to be of higher quality.

Patented inventions or a firm's own market research have a high degree of exclusivity and represent privileged information of a high quality. The law regards most information as being in common ownership largely, it could be assumed, not only because of the difficulty of allocating property rights but of enforcing them. However, it is recognised that a degree of property right should be afforded where possible to those generating new information. This describes the field of Patent and Patent Law. Patented information is of high quality, exclusive and protected. Among all information it is possibly one of the few kinds for which it is possible to construct a resale market. But many of the types of information indicated in Section 2.3 would be less likely to have a high degree of exclusivity. The exception in many cases might be the information exploited by salesmen. If they establish a new firm to exploit some information they have gathered during their sales activity there is a higher probability that this information is exclusive gathered as it is in one-to-one situations. Entrepreneurial information is rarely perfectly exclusive. Companies can be reasonably certain of the exclusivity of the output of their R. & D. departments and perhaps less so of their market research information. But the average individual who spots a profit opportunity somewhere in his environment can be fairly sure that others will have spotted the same opportunity. In general companies have access to much higher quality information, much of which they generate themselves. Individuals in general have access to much lower quality information with the danger that others will also have perceived it and may act to exploit it.

While 'exclusivity' is only one aspect of the quality of information it is considered in this thesis to be a singularly important aspect. Acknowledging that new information with profit potential may not be perfectly exclusive but may have varying degrees of exclusivity according to how many individuals perceive it has an important implication for the theory of entry.

The implication is that it is not possible to have a predictive theory of entry. Apart from the difficulty of measuring exclusive information, the concept of degrees of exclusivity mean that the number who perceive and respond to the profit opportunity is indeterminate. Each potential founder has no idea how many individuals are currently locating to exploit the same information, and it has already been pointed out that there is no advantage in delay.

An implication of this is that there is almost certain to be, except by accident, a non-optimal amount of participation. Again this calls into question the equilibrating nature of entrepreneurial activity put forward by Kirzner et.al. There can be no steady progression towards equilibrium as information is exploited since the non-optimal participation (non-optimal only in the sense of not generating a steady progression towards equilibrium) with consequent failure of some participants will itself be a source of disequilibrium. Hayek reprinted in Hayek 1948) made this point that for equilibrium we require a special kind of knowledge - the knowledge of other people's plans. By

implication then, disequilibrium will be caused by the ignorance of others' plans as in the case of potential new firm founders . Rather than equilibrating or disequilibrating the process engendered by entrepreneurial activity is much more accurately described as one of trial and error, which conclusion places entrepreneurial activity squarely in the evolutionary approach to economic theory. Only by trial and error through market participation can the necessary information be generated to alleviate the uncertainty. Although they don't describe the process as belonging to the evolutionary school of economic theory, both Kirzner(1973) and Casson(1982) recognise that as well as exploiting information, entrepreneurs also by their market participation, generate information - information which could not be discovered any other way. In Casson's words:

> "implementation of any activity always generates information as a by-product. Where the activity is designed to exploit privileged information, the information thrown up by the activity can be used to validate the initial claim."
>
> (Casson 1982 p.212.)

Kirzner expresses essentially the same idea:

> "Essential to the notion of the market process .... is the acquisition of market information through the experience of market participation .... adjustments in market plans arise ..... from the market participants discovery that their

anticipations were overly optimistic or unduly pessimistic."

(Kirzner 1973 p.13-14.)

It is deemed rational for new firms to form under uncertainty about others' plans and, therefore, their own profit expectations because only market participation can resolve the uncertainty. Since the degree of exclusivity of information cannot be ascertained nor the expectations which individuals will form about the information, the amount of market participation, that is, new firm formation, is indeterminate .

The implication of the above analysis of new firm formation under uncertainty is that the extent or capacity of the information to support all the new firms formed to exploit it will be a major determinant of survival and failure rates.

2.8 Survivors And Failures:

The analysis of uncertainty in the previous section logically leads to a consideration of survival and failure among new entrants. Obviously this is an important dimension to new firms' research from the policy viewpoint. Storey (1982) points out that given the diversity of performance within the small firm sector, it is imperative to be able to determine the characteristics of winners and losers. The high failure rate among new entrants, up to one third of total entrants in some studies, makes it important

to be able to identify those more likely to survive in order not to waste resources.

From a theoretical point of view, several authors have also identified the importance of enumerating failures as well as survivors to progress the theory of entrepreneurship. Casson's (1982 p.11) perspective is that :

> "the essence of the theory of the entrepreneur is not so much a rationalisation of success as the explanation of failure".
>
> (Casson 1982 p.11)

while Evesey Domar (1968) comments that the study of success is only likely to mislead. He suggests that we set up some hypotheses regarding the characteristics or components that gave rise to an entrepreneur be set up and then tested against both successes and failures (Domar 1968 p.93).

Winter (1964), who along with Nelson (Nelson and Winter 1982) is responsible for much of the recent development of the evolutionary model of economic change, is clear that:

> "The emphasis in the theory of entry and exit should be put on exit rather than entry."
>
> (Winter 1964 p.238.)

Burton (1983) stresses that the failure of enterprises is as significant as their survival in the evolutionary model of the economic system:

> "the occurrence of losses is of fundamental importance to the evolutionary functioning of the market economy."
>
> (Burton 1983 p.16.)

He suggests that the analysis of loss-making has been neglected. The development of quantitative optimising techniques in economics focuses on success:

> "business catastrophes and collapses do not fit easily into such a framework."
>
> (Burton 1983 p.18.)

and treats losses as positive profits 'with the sign reversed' But in the evolutionary model business failure has a qualitative significance beyond that which can be conveyed as negative profits. If positive profits are the aim then negative profits ought to be prevented. For this reason enterprise failure has become an increasingly important cause of government intervention. But viewing losses as negative profits obscures the fact that in the evolutionary model the eradication of loss-making concerns yields "positive systemic consequences for the functioning of the economy as a whole" (Burton 1983 p.20). In the same way that

profits provide signals for the redistribution of resources, losses redirect resources away from unviable industries or firms.

There are other indications in the literature that a 'non-optimal' amount of market participation is to be expected and that it is a necessary and important process:[4]

"participants will experience market phenomena such as surpluses or shortages that will teach them more accurate information."

(Kirzner 1979 p.26.)

Tiebout hints that the non-optimal participation should be 'too much' rather than 'too little' so that from among the numbers of entrants:

"the economic system can pick and choose."

(Tiebout 1957 p.84)

Only 'overexploitation' would be in-keeping with Hayek's pioneering view of the market process being one of information dissemination and discovery. Only by participating will individuals generate the information which will cause them:

"to regret their execution of their plans because the realised plans of others differ from those which had been anticipated."

(Kirzner 1979 p.23.)

'Overexploitation' and subsequent failure illustrate the acquisition of knowledge by economic actors. This represents a view of failure among new entrants different to that which ascribes it mainly to the capabilities of founders. Appendix 2 challenges the relevancy of the traditional determinants of exit to 'infant deaths' but suggesed that there did seem evidence of some relationship between entry and infant exit. The analysis of this section suggests that the failure of new entrants is a natural part of the information exploitation and generation process. Exit in infancy would not be due to a fault in the decision calculus of the individual but to impersonal market forces. The individual new firm would be part of the information generation and exploitation which defines the market process. In fact Alchian(1950) removes most of the responsibility for survival and failure from the individual by suggesting that:

> "the greater the uncertainties of the world, the greater is the possibility that profits (and hence survival) would go to the venturesome and lucky rather than to the logical, careful fact gathering individuals."
>
> (Alchian 1950 p.213.)

The greater the uncertainties the more use there is for a trial and error process which will throw up or generate the information which could not be deduced any other way.

2.9 Conclusions:

If the above analysis is correct in taking the emphasis in survival and failure away from the individual decision calculus then personal factors and capabilities are unlikely to be good explanators of survival and failure. Survival is not so much influenced by individual foresight and motivation as by the numbers who act to exploit the same information. Hence the relationship between entry and exit. However, it can never be an exact relationship since the initial number of entrants will always be indeterminate and not knowable in advance.

A further implication of this view of survival and failure is that it introduces a stochastic element into empirical work. Statements about survival and failure have to be couched in terms of probabilities. The less exclusive a piece of new information is considered to be the higher the probability that an individual acting to exploit that information will fail. The more exclusive a piece of new information is considered to be the higher the probability that an individual acting to exploit it will survive and grow. Thus if a number of individuals act to exploit the same information several of them may survive but the greater the original number who act, the greater the number who will fail and, therefore, ante facto the greater the probability that any individual firm will fail. Thus even if some factors could be found which could accurately model the exclusiveness of information, what it would be determining is not success or

failure but rather a high probability of success and a low probability of success since even for those who exploit information with low exclusivity some will survive. Any analysis to find factors which could discriminate between success and failure will find the task of discrimination more difficult because of this. Some firms with a low probability of success will succeed. Others with a relatively high probability of surviving will fail. And of course these probabilities can only be known after the event when the numbers of survivors can be compared to the numbers of failures.

The next chapter, sets out the developement of a methodology to test the theory. However, although both the evolutionary model and the particular theory developed in the thesis describe this alternative role for failure in the economic system, their ability to predict the survivors and failures is limited. Neither the evolutionary model nor the theory claim to be able to 'pick winners'. The perspective is one of viewing the operation of the system as a whole rather than the individuals within it.

Notes:

1. In Britain the south-east is not only the most important generator of new information, products and processes, research and development being concentrated there, but it is also favourably placed for importing the same from abroad and it is the centre of communications.

2. Casson's analysis is brought to bear here because he clearly had a similar conception of the fragmentation of entrepreneurial activity put forward in the thesis. But it is the researcher's view that Casson's way of expressing the entrepreneurial activity as being the taking of a judgemental decision and the implications that there are a certain number of judgemental decisions to be taken the problem being to find the right entrepreneur for each decision fudges the role of the entrepreneur in ferreting out or creating the decision position. The judgemental decision doesn't exist, the entrepreneur creates it. Therefore, it is difficult to postulate an equilibrium type of analysis of a certain number of judgemental decisions looking for the same number of entrepre neurs to take them. Entrepreneurial activity in the researcher's view is very unhappy in the equilibrium framework primarily because there is no demand independent of the supply of entrepreneurs. See Chapter 5.

3. The simplest definition of a public good is one whose consumption by one individual does not preclude its consumption by another. Clearly information fulfills this criteria.

4. Since it is suggested here that over-exploitation indicates that we have a sufficient supply of entrepreneurs, then the only sense in which over-exploitation is non-optimal is that the process is one of trial and error rather than a steady progression towards equilibrium. Without failure i.e.over-exploitation it is suggested we would not know whether the economy was generating adequate entrepreneurial activity.

CHAPTER 3

MEASURING INFORMATION : THE QUESTIONNAIRE

One way of testing the theory of entry and exit described in chapters 1 and 2 would be to attempt to establish the information bases of a sample of new firms and then to test whether any of the dimensions of information measured was able to discriminate in the longer run between the survivors and non-survivors. A major part of the thesis was the attempt to establish for a defined time period the total new firm population in the West Midlands. It was in fact the results of this attempt in highlighting the the extent of entry and the proportions of survivors and non-survivors which prompted the approach to entry and 'infant'exit described in chapters 1 and 2. The sample of firms on which detailed information was to be gathered was taken from this new micro-data set. The data set is described at length in Appendix 3 ,the sampling procedure is described in Appendix 4 and a copy of the questionnaire forms Appendix 5.This chapter describes how the questionnaire's questions aim to measure the information bases of the new founders in a way relevant to the theory outlined in chapters 1 and 2 and the following chapter suggests a way of analyseing the questionnaire results to test the theory.

3.1 Measuring Information :

There are at least several dimensions to information. In common with many other commodities two of these dimensions would be quality and quantity.The thesis postulates that a particular aspect of quality, exclusiveness, will be a major determinant of survival or non-survival. The questionnaire produces 3 sets of variables; those considered to measure the exclusiveness of the new founders information base , those considered to measure other dimensions of information which might be considered to influence survival and non-survival,and another set of variables considered to have no a priori relevance to the relationship between information and entrepreneurship.

3.2 Measuring the Exclusiveness of Information: The Main Discriminant Run

Sales Experience

Chapter 2 considered how individuals perceive information and how they might perceive it exclusively. It was considered that people involved in selling activity are in a favourable position to perceive new information to which they alone are privy. The variable SALEXP measures the previous sales experience of the

founders prior to start-up in the trade in which they had set-up. This variable had the advantage that it is unaffected by activity since start-up. In trying to specify variables which measured the exclusiveness of the founders information base at start-up, it was difficult to ensure that events since start-up did not influence the value of the variable.

Another 6 variables were derived from the questionnaire as being a priori relevant to the theory of the importance of the exclusiveness of information to entrepreneurship. These are LOCALC LCALCU, CUSWM, LCSECH,SUPLOC and SAMWOK. The definitions of these variables are detailed in appendix 6. They measure the length of various linkages of the firm to its customers,competitors and suppliers.Following Townroe (1969) the extent of a firms information network is measured by establishing the length and frequency of their industrial linkages. The information on linkages is then used by the researcher to infer the degree of localness of the firms information base.The more local the information base, the less likely is it that information which prompted start-up is exclusively held by the founder and hence the more likely is non-survival.

The parallel between information flows and flows of goods and services (linkages) is established in the literature (e.g.Townroe

1969 , Wood 1969). The link between local information defined by such linkages and the exclusivity of the information is of the researchers divining. It is based on the proposition that where the source and destination of an information flow (or linkage) are in the same local area that information has more potential for being perceived and understood by individuals in the area.The more individuals who perceive the information , the less exclusively will it be held. The use of linkages is an attempt to model the concept of exclusiveness by elements measurable in the form of a questionnaire.

3.2.1 Measuring Localness by Establishing Linkages

Using their location as the base ,what is to required is to measure the extent of the firms information network. The flows of information for this purpose are deemed to be coterminous with the flows of goods and materials both from and to the new firm. Small firms and new firms of the type forming the population of the study are unlikely to have sophisticated information gathering techniques. Large firms will gather information as a separate business strategy but the firms considered here will receive information only as part of their normal business activities and thus it is considered that the extent of their linkages with other

firms will also define the extent of their information network. The extent of their information network could then be measured by establishing the length and frequency of their industrial linkages insofar as such a complex network can be measured. Following Townroe (1969) linkage can be summarised as follows:

(a) Process : The movement of goods between different firms as stages in the manufacturing process (including subcontract).

(b) Service : The supply of machinery and equipment and of ancillary parts such as tools and dies, as well as repair and maintenance requirements.

(c) Marketing : Ties with other firms that aid in the selling and distribution of goods e.g. packers, printers, wholesalers, agents and transportation concerns.

(d) Financial and Commercial : Ties with financial and advisory services such as banks, insurance companies and stockbrokers.

(a) The movement of goods was measured by establishing the percentage of customers local, West Midlands and further afield. The same information on suppliers was obtained to measure (b). Marketing ties were also measured by (a).Information on the type

of customers served, wholesalers/distributors,agents, final consumers or other manufacturer established the frequency of links with other types of organisation but this information was considered to be of no a priori significance and the variables arising were only submitted in Discriminant Run 3 where such variables were tested for discriminating ability.

However, as Wood (1969) pointed out, if linkage is worth consideration, it must provide an explanation for distinctive industrial patterns or important locational trends. To merely describe the linkages simply defines the scope of manufacturing. Researchers (Wood 1966, Townroe 1969, et. al.) have generally used linkage to examine location decisions. Here location is used as a basis for establishing the information network of the firm which in turn,the thesis predicts, should influence the probability of survival or failure of the firm. But if location and operating linkages are to be used as ways of measuring the information which was available to new firm founders before they established their firms, we have to theorise that the information we are measuring was the information available to them at start-up rather than the accumulation of information gained after starting the firm.

The questionnaire survey indicated that founders experience considerable pressure on their time. They are required to both

manage and produce . A new situation for most. Only a few had full-time secretarial back-up. Most relied on part-time help or perhaps intermittent help from within the family. But answering the phone ,keeping the books and chasing up debts all represented considerable depletion of actual production time. This left little time for any kind of information gathering strategy. One founder had been in business for 18 months before he could afford to 'go on the road' one day a week looking for business and this was only made possible by a friend made redundant who was willing to answer the phone for a nominal sum on that one day. Most founders also considered cold calling a waste of time . They really required to know in advance where pockets of work that they might tap and they usually needed some kind of personal contact or recommendation in order to secure the work. Most information was gained from existing customers and suppliers. The founders themselves provided instances of how such information is often gained. One founder outlined the method of a rival. The rival would follow the delivery lorry leaving the founders premises to its destination in order to find out who the founders customers were. Another founder had a rival as a regular visitor to his premises. The visitor would come on some pretext and would take the opportunity to look round the work-shop area. The founder indicated that the rival would be able to tell by the nature of the materials being processed who the founder had obtained work for. Founders guard

the names of their customers carefully and several actually mentioned that they would not allow rivals into their work-shop areas.

From the scenarios outlined above, it can be gauged what kind of information is useful to founders and from where this is likely to be obtained. It is clearly difficult to extend the information base of a firm in a way that would be useful. It is also the case that the opportunity cost of looking for more work or extending the customer list is high in terms of production foregone. The founder's information network at inception will establish the information flows available to him for some considerable time after the business is established. Therefore if he has a 'local' information network at inception, this is likely to remain 'local'for some time.While his information in total may increase over time ,as all information bases do, the nature of the network, local or non-local,is unlikely to change. If this network is local ,then the perception of exclusive information after inception which would influence the probability of survival or failure is unlikely to occur. Equally if initially the information network was non-local, it is likely to remain so and the firm may continue to perceive more information to which it is exclusively exposed.

Therefore although the effects of information at birth and information gained subsequently cannot be entirely disentangled in terms of their effect on survival and non-survival the above analysis helps in 2 ways:

1)The nature of the network i.e. local or non-local is unlikely to change over the short term.

2)It is in any case very difficult in most cases to extend the information base in a useful way i.e.in a way which might influence the probability of survival

It will also be established in the analysis of the questionnaire that the most important variables discriminating between survival and failure are variables whose values would be unaffected by the passage of time since start-up.

Taylor(1970)would disagree with this analysis. He has criticised the use of Wood's behavioural approach to location decisions on the grounds that newly created firms are the most numerous amongst those engaged in selecting locations and that it is unrealistic to credit these enterprises with the requisite working knowledge of operating linkages immediately prior to the location decision:

> "All the information that pioneer manufacturers might be expected to possess at such a time is some vague idea about where he might buy from and where he might sell to".
>
> Taylor 1970 p.54

Bater and Walker,however,do not agree that knowledge of potential linkages by new entrepreneurs is almost nil:

> "In many cases new entrepreneurs have already been employed in a similar industry in the area in which they are developing a new firm .... not only know some potential suppliers and buyers but attempt to guarantee some goods linkages before starting the operation".
>
> Bater and Walker 1970 p.59

This is also the researchers experience. Measuring the linkages in the firms' earliest stages minimizes Taylor's objection that linkages will have been modified by time and experience and will not reflect the original decision considerations. Also, in terms of the particular thesis put forward here, any modification of the information base will not be such as to affect the probability of survival or non-survival. Therefore, the researcher would agree with Taylor's conclusion that linkages might make their

contribution to locational explanation not as forces pulling entrepreneurs to particular optimum locations but:

> ".... as a necessary set of conditions for the survival and further development of firms in their areas of birth".
>
> Taylor 1970 p.54

The nature of the linkages is examined to see if, when interpreted as a surrogate for the information available to the entrepreneur at start-up, it can be established whether some types of information influence the chances of survival or failure.

The percentage of the firms customers in the 'local' area (LCALCU), the number of competitors in the West Midlands, SAMWOK, and a measure of the localisation of the trade within the West Midlands, LOCALC, were the main measures of localness and hence exclusivity. The existence of a local market is more likely to have been widely known in an area than a market further afield while if a firm is located in an area where his trade is highly localised opportunities pertaining to that trade are less likely to have been exclusively held. Additional measures of 'localness' include a measure of the founder's search behaviour for premises, LCSECH. The extensiveness of search was measured on a three point scale. Founders who confined their search to less

than a five mile radius were deemed to be highly 'local' while those searching beyond this to a ten mile radius or further within the West Midlands were exhibiting a mobility which indicated that their information base was less tied to the very local (less than five mile radius) area.

The final variable in the main discriminant run, RESLEV, measures on a 2 point scale whether departure from previous employment was voluntary or involuntary. It is postulated that those who leave voluntarily to set up on their own, possess information judged by them to be of high quality and thus having greater prospect of high return. This would need to be the case as the opportunity cost of setting up on their own is higher for such individuals.

3.3 An Alternative Discriminant Analysis

In terms of information theory the most obvious alternative to the 'the exclusive information theory' of survival and non-survival among new firms ,is that the quantity of information they possess might influence the outcome. It is possible using the questionnaire data to explore this alternative hypothesis in a limited way. Testing this alternative hypothesis also provides additional evidence about the likely influence of information

gathered since start-up on the probability of survival or non-survival. If the quantity of information proves not to be a good discriminator between survivors and non- survivors then if since start-up a firm has only increased its quantity of information those will not interfere with the testing of the 'exclusiveness of information' hypothesis. On the other hand , if establishing the business puts the founder in a better position to perceive exclusive information then it becomes impossible to test the 'exclusiveness' theory using information gathered some months after start-up. However the discussion on pages * to* aimed at establishing the latter possibility as a minor one.

Using Pred's (1967) analysis of information bases of firms it is possible to derive some variables which aim to measure the quantity of information. Pred also suggests the ability to use information might be an important determinant of success.This dimension is combined with the quantity of information dimension in the alternative discriminant analysis as theoretically ability would be expected to be a determinant of quantity.

3.3.1 Quantity of Information and the Ability To Use It:

Pred (1967) in the interests of explaining patterns of industrial location indicates at least two other dimensions of information

which should be considered in the present study. The outcome, survival or failure, of the new firm formation may be influenced by the quantity of information possessed and by the individual's ability to use the information.

Pred attempts to operationalise these two dimensions by suggesting what elements of information (called hubits) we might measure. The basic concepts are drawn from the behavioural sciences and the diffusion-of-innovation literature. He suggests that :

> "his position vis-a-vis the information axis is usually some function of both his geographic characteristics (place of residence and daily field of movement) and personal attributes".
>
> Pred (1967) p.32.

While:

> "aspiration level, past experience and position in the life cycle".
>
> Pred (1967 p.40).

would influence his position on the 'ability-to-use' axis. In more

diverse ways:

> ".... sex, age, income, education, occupation, marital status, political, religious and other affiliations...."
>
> Pred 1967 p.34.

will influence quantity of information possessed and the ability to use it. The researcher measured age of founders (AGEFON) and education since school (TECQAL and MANQAL) .A 'previous income' question was included in the pilot but was left out of the final survey since it was met with vagueness and, on occasion, hostility. Pred stresses education as a particularly important personal attribute since it not only represents an accumulation of information but also the ability to use it and to some extent a larger information collection field. Schultz (1980) builds his thesis around the effect of education, arguing that increases in the ability of entrepreneurs contributes to their efficiency in acquiring information and in formulating and acting upon their expnctations. This suggests that education may also contribute to the ability to perceive exclusive information but in the present context the theoretical link is considered to remote to include the education variables in the list of those relevant to the exclusiveness of information theory.

A multi-person firm can also be accommodated in Pred's framework since :

> "a multi-person firm is basically a composite result mirroring the information and ability to use characteristics of a number of individual .... actors".
>
> Pred 1967 p.54.

The number of founders was included as a variable relevant to the quantity of information since:

> "any coalition of individuals are likely to enable(the firm) to gather a larger quantity and better quality of information than that assembled by most single actors".
>
> Pred 1967 p.57.

Past experience obviously also exerts an influence on both the quality and quantity of information possessed but this was divided into two types -past experience in the trade in which the new business was started:

> "The knowledge possessed by a firm's personnel tends to increase automatically with experience".
>
> Penrose (1959) p.76

and past experience in sales, TRDEXP and SALEXP respectively. SALEXP was included in the Discriminant Run 1 and TRDEXP in the second alternative run. The researcher felt that these two types of experience were quite different in effect and as outlined elsewhere in the thesis that sales experience gave rise to particularly good quality (highly exclusive) information. Whether the founder had previously run his own business was thought to influence the quantity of information he possessed:

> "Any actor embarking upon a .... decision-making process for the second or third or nth time can be viewed as working with more information than previously by the mere fact of his past experience .... he would always have an informational increment due to the outcome of his last experience".
>
> Pred 1969 p.38

although Shackle (1969 p.57) contests the direction on information of this effect suggesting it would not always be an advance if for example the actor had lapsed into an habitual behaviour pattern yielding identical results. OWNBUS measures whether any of the founders had previously run their own business and BUSPRV measures whether or not the new firm is in the same trade as the founders

previous employer. Being in the same trade is considered to increase their information base of relevant information.

A further variable in this section EMPEML, measured the size in employment terms of the founder's previous employer. A relationship between size of firm and new firm spin-offs has been indicated in the literature (Johnson and Cathcart (1979) . This is theorised to be due to the better all-round experience which employees of smaller firms receive. Thus it purports to measure the quantity of relevant information possessed by a founder and a priori is irrelevant to the exclusive information theory of entrepreneurship. It is entered in the second, alternative, discriminant analysis. In including it in this analysis it might indicate whether founders from smaller firms, although more numerous, are also more successful. In terms of this thesis, founders from small firms may perceive more information but this information is of lower quality.They may perceive information with profit potential on which they start a firm but it is their short-term survival which will indicate whether the information was also of high quality. It is suggested that information flow in small firms is freer but information is of lower quality. A freer information flow would lead to lower exclusivity, lower quality and hence higher failure rate among those previously employed by smaller firms.

Pred also suggests that the later an actor is born the better his position with respect to the information axis is likely to be,

partly because of the constant creation of new knowledge by the successful and unsuccessful action outcomes of others, and partly because of the greater amount of time during which old private and public information has spread through information fields. On this argument there would be an inverse relationship between age of founders and performance variable in the analysis. However, in terms of this thesis it is information which is not widely discriminated which is important and influential. Much private information is gathered in one-to-one situations and will never be widely disseminated. Much experience is also of this private nature. This view would predict that older founders would have a more knowledgeable place on the information axes. AGEFON (age of founder) has been included as a further indicator of experience and knowledge.

Most of the other influences on information mentioned by Pred e.g. status, political and religious affiliations, could not conceivably be measured at the interval level required.Other variables which were submitted to the alternative discriminant analysis were TOTCUS and METHNO. TOTCUS is the total number of regular customers of the firm. If more customers reflects a greater quantity of information then if quantity rather than exclusiveness of information is important to survival, TOTCUS would be a good discriminator of survivors and non-survivors. What is a viable number of regular customers will vary from trade to trade but this weakness in this variable is minimised because all

the firms in the sample were from a single SIC category and were similarly small.

METHNO is the number of marketing strategies currently being pursued by the firm. They represent attempts to increase the firms information. The more strategies being pursued the greater the quantity of information being accumulated.

3.4 A Third Discriminant Analysis

A final discriminant analysis was run using variables extracted from the questionnaire information but which were considered to be a priori irrelevant to any information theory of entrepreneurship (the questionnaire aimed to gather extensive information on new firms and not only information relevant to the theory under test). This third discriminant run was to provide a comparison to the statistical significance of particularly the first run to see whether the set of relevant variables produced superior discrimination to a set of variables of no relevance to the theory under test.

In completing the questionnaire information was sought as to the investment in and employment numbers of the new firms. While both of these may be good predictors of success they are not the underlying causes of survival or non-survival. More money and more employees will not increase chances of survival. Rather higher

levels of finance and employment reflect the already assessed chances of survival, that is the new firm is perceived to be based on good quality, exclusive information.

The variable DIFFER was excluded from the main discriminant run because the information content was severely reduced by having to constrain answers about the uniqueness of their product or process to a yes/no dichotomy for coding purposes. For the same reason COMADV, SECRET and CONTAC were all excluded from the main analysis on the grounds that they contained little information. These variables arose from questionnaire questions which were included to encourage the new founders to talk about their position. But in retrospect the variables were forced from the replies which did not give rise to codeable information. COMADV arose from a question about whether the founder perceived himself to have a commercial advantage. The replies to this question reflected the confidence of new founders in their own abilities rather than eliciting a number of features of which the founder considered he had a monopoly.

SECRET was similarly revealing in terms of founders attitudes. The replies to a question about whether their customer base was a closely guarded secret revealed an almost unanimous jealousy in protecting the identities of those to whom they were selling.

CONTAC aimed to measure the founders contact with others in their trade as part of the attempt to establish information flows.

However since such contacts occur post start-up, a priori they cannot be relevant to the theory of entrepreneurship and start-up.

PERCEN was also excluded from the discriminant analysis as being of no relevance to the theory under test. It concerned subcontracting activity. Questions on subcontracting were included in the questionnaire to ascertain whether this might be an important factor in location. In the event so little subcontracting takes place (many of the firms being themselves subcontractors) that the variable derived from the questions was deemed to have no information content and was excluded from the main discriminant analysis.

AVGCUS, the average size in employment terms of the founders customers was also excluded from the main analysis on the grounds of lack of theoretical significance. While interesting information it was considered to be irrelevant to the information theory of entrepreneurship.

CUSFUR, measuring the percentage of the new firms' customers located outside the West Midlands, was excluded from all the discriminant runs because together with CUSWM and LCALCU they add up to 100%. Thus it must be perfectly negatively correlated with CUSWM and LCALCU together. Since the information included in CUSFUR is already included in the 2 other variables, it is excluded from both the main analysis and the alternative analyses.

LAGCUS, CUSMFR, CUSCON, CUSDIT, CUSSEK, and EMPLOC, the size of the new firms largest customer, the percentage of customers in manufacturing, final consumers and distributors, whether the firm is currently seeking new business and the number of miles of the new founders premises from those of his old employer respectively were excluded from the first two discriminant runs as having no a priori relevance to the information theory of entrepreneurship as specified in their current form. SIXMTH, the proportion of the firms present customers which the firm had obtained in its first six months of operation, was mis-specified in attempting to measure the the new firms initial customer base. It was therefore excluded from the main analysis.

3.6 Conclusion

Obviously there are enormous difficulties in undertaking the measurement of the kind of factors relevant to the hypothesis outlined in the thesis. As Pred (1967) points out the present state of knowledge in the behavioural sciences does not permit the construction of a scale for measuring a phenomenon as complex as the decision-making ability of actors and at best only the crudest and most arbitrary scaling can be attempted.

However, the existence of powerful multi-variate techniques which can be run on computer makes it worthwhile to attempt to measure and analyse as many of the factors as possible. Sub-program

discriminant available on SPSS which the researcher uses and describes in detail in Chapter 4 provides a tool whereby a large number of varied measures can be submitted to analysis for exploratory purposes.

CHAPTER 4

DATA ANALYSIS

4.0 Introduction :

The study began as an investigation into the determinants of independent entry. Most of the literature on entry and exit analyses the phenomenon by exploring inter-industry differences in the rates of entry and exit. The determinants of entry are then specified to explain inter-industry differences. The empirical results of this approach were often poor (e.g. Hamilton 1982, Gudgin 1974) and even contrary to theory. Appendix 1 describes this finding in more detail and it was suggested there that what the theory of entry lacked was a theory of entrepreneurship. The researcher considered that the determinants of entry lacked statistical significance because, in terms of a theory of entrepreneurship, they mostly lacked any explanatory power. In short a theory of inter-industry differences in entry rates is not a theory of entrepreneurship. What we need to explain entry is a theory of entrepreneurship. Beesley's (1955) study was a notable exception in that his account of the inter-zone differences in entry rates was framed in terms of a theory of entrepreneurship. He suggested that the complex juxtapositioning of trades and industries gave rise to new combinations and new products which individuals exploited by forming new firms.

The aim of the thesis was to develop a theory of entrepreneurship capable of explaining new independent entry and then, as far as might be possible, to test this theory. To the extent that it has been accomplished the latter is described in Chapters 1 and 2. These chapters drew heavily on Casson's (1982) theory of entrepreneurship and the earlier works of Kirzner (1973) and Shackle (1969).

4.1 Testing The Theory:

Although more specific and deterministic than the 'Austrian' theories of entrepreneurship,Casson's (1982) theory turns out to have no more real predictive power than, for example, Kirzner's (1973) theory of entrepreneurship as 'alertness'. Since no one can define entrepreneurial opportunities except entrepreneurs, the rate of entry will be dependent on the supply of entrepreneurs which it is impossible to measure. (this last is the subject matter of Chapter 5). What needs to be recognised here is that we cannot predict entry also because since information is usually imperfectly exclusive we have no way of knowing ex ante how many will act to exploit the information.

A postulate derived from the above is that we would expect more individuals to exploit a piece of information the less perfectly exclusive it is (although perceived as exclusively held by those entrepreneurs who held it). Failure and exit is at least partly thus accounted for by the overexploitation of information.

Therefore although we cannot predict the rate of entry or numbers of entrants , we could validate the theory indirectly if it could be shown that survival was closely related to the degree of exclusiveness of the initial information exploited.

4.2 Discriminating Between Survivors And Failures:

Any attempt to validate this theory of entrepreneurship could thus possibly proceed through isolating factors which discriminated between survival and failure. The theory would be at least partially validated if the 'exclusiveness' of information possessed by the founder was such a discriminating factor.

Discriminant Analysis, available on the SPSS software package,is used to study the differences between two or more groups and a set of discriminating variables.The technique is described more fully in Appendix 12.In this case the groups were in the first instance success and failure (but see this chapter,paragraph 'Regrouping The Cases') and the discriminating variables were the coded questionnaire data collected from the sample of 74 firms.(Appendix 4 describes the method of selection of the sample)

4.3 The Groups:

In order to proceed with the discriminant analysis the researcher has to specify the groups between which it is desired to discriminate. The simplest grouping in the present study is survival/non-survival .The researcher used this classification for

several runs on the DISCRIMINANT subprogram but a problem emerged with this simple classification. Although in the total population survivors and non-survivors were in a roughly 3:2 ratio, in the sample which was interviewed there were only 4 non-survivors and 70 survivors.This presents difficulties to the discriminant technique. The classification of cases is most robust when the number of cases in each group is more evenly balanced. A high percentage of 'cases correctly classified' by the discriminant function is misleading if a large proportion of the cases are initially in one group .The researcher could not manipulate the two-way survivor/non-survivor classification so an alternative measure(s) of performance was sought which would produce a more proportionately balanced initial allocation of cases. An alternative scaling was developed from questionnaire data which was not to be used in the discriminant analysis.

4.4 The Discriminant Analyses:

The sample was always likely to have more survivors than the population because the researcher could only include survivors in the questionnaire sample survey. Early in the study the difficulty of contacting non-survivors was faced.No longer contactable by the business number given in Yellow Pages talking to the founders of failed firms would necessitate tracing domestic addresses from the companies register in the case of companies which had been recently registered. Older deceased companies and those never registered as such would not be contactable by any

process.Underlining these difficulties was the indelicacy of contacting those who had failed ,an anticipated lack of co-operation perhaps reflected in inaccurate responses.It was hoped a sufficient number of these firms which were interviewed would have been found to fail at the end of the test period! However, although the sample came from phone directories at least a year old, the period between interview and subsequent check on existence (through next edition of Yellow Pages and by phone call) was only ten months at most.Interviewing took place during the months of July and August of 1983 and the follow-up took place in May 1984.Ideally this period would be at least fifteen months to give the interviewees a reasonable chance to fail!

It would be expected that over a longer period some firms who currently were not performing well might cease to exist. But it is difficult to use a measure of performance to substitute for expected failure since performance measures such as profit or turnover are unreliable indicators of future performance for the same reasons that they were not included as discriminating variables. Profit is variously measured by different firms and several of the sample survey firms with distinct potential were currently earning no profit while developing products or markets. These performance measures were unlikely to substitute for expected success/failure.

An alternative to using either actual survivor/non-survivor groupings or attempting to predict them through performance

measures, would be to measure the likelihood of future growth. In terms of the theory this would be more subtle than using survivors/non-survivors. The non-survivors and expected non-survivors could be expected to fall into the no or negligible growth category while those firms with little potential would also be expected to fall into this same category. The theory postulates that many of the firms which fail are the natural result of too many exploiting poor quality (low exclusiveness) information.

It is feasible, however, that the information could support a smaller number of firms making profit or a greater number of firms operating at break-even level keeping all costs and overheads to a minimum with growth circumscribed. Firms in this latter position possibly have much in common with firms which cease to exist and could justifiably be classified with them rather than with an alternative group of new firms who are not only surviving but are planning growth. Obviously those who are operating at break-even are vulnerable and it is plausible that future failures will emerge from this group. (Firms which expand rapidly might also find themselves vulnerable although the outcome in this case would more often be takeover than exit). In any case, if the sample survey is representative, rapid growers are not a significant number. Growth in the sample survey firms was cautious and slow .

What this alternative grouping suggests is that survival is not the only standard by which to judge new firm performance. We may want to recognise that survival can indicate a very low standard

of operation. This of course is quite consistent with the thesis' 'austrian' theme and its abandonment of perfect competition which annot conceive of any persisting performance situation except reak-even. While the survivor/non-survivor grouping is a very nteresting 'acid-test', the theory put forward in the thesis can qually accommodate an alternative grouping 'failures and no owth plans survivors' and 'survivors with plans for growth'. e exclusive information theory of entrepreneurship would predict that firms started on a basis of local information are more likely to fail and even if they don't fail will have lower growth potential for at least 2 reasons:

1. Because even if they manage to stay in business they will still suffer performance-wise because of competition from those who acted to exploit the same information, and

2. Because, having established to exploit 'Local' information, the firm is less likely to expand and grow.

4.5 The Alternative Grouping:

The alternative grouping of the cases into 'non-survivors and low growth potential survivors' and 'survivors with growth potential' was achieved by using the responses to a set of questionnaire questions asking about the firms plans for the next twelve months. The question covered seven areas; additions to employees, or plant, new or additional premises, new products or

markets, forward or backward integration. The scaling also attempted to take into account whether the plans were firm or tentative. While a 3 or 4 grouping of cases could be achieved in this way, less is required of the scaling outlined above if the aim is only a 2 way classification of the cases. The firm was placed in the 'survivors with growth potential', if it was a survivor and had firm proposals for expansion in any one of the areas highlighted above. Firms who had no plans for expansion in any of the areas were placed in the alternative 'failures and no growth survivors' group. The variable 'PERFOM 'was used to describe these 2 groups,taking the value 2 for the 'non-survivors and no growth' group and 3 for the 'survivors with growth' group.It is encouraging to note that the four firmly identified failures answered that they had no firm proposals for expansion. At least at this minimal level the alternative grouping did not contradict itself. The question on plans, although summarised for computer coding, was considered at comparative length in the interview situation. The question covered seven areas of potential expansion in order to pick up any type of proposed expansion. New firms are very diverse. Moreover they typically progress with great caution so that any firm proposal for expansion, however small,was accepted by the researcher as evidence of the likelihood of their continuing in operation.An additional employee might represent a doubling of the workforce and is a much larger and more significant commitment in the small/new firm situation than in larger firms. All the evidence suggests that new firm founders do not 'hire and fire' lightly

case and Goffee 1982). The limited resources and inherent tion of new firm founders makes it unlikely that they would be gressing on any more than one or two of the fronts listed. Relatively speaking a stand at an engineering exhibition or printing and distribution of promotional literature represent a substantial allocation of time and/or finance in the new firm situation. If the founder decides to 'go-on-the-road' one day a week to explore the market outside the local area again this is a substantial commitment of his limited resources. Obviously it required a certain amount of judgement to decide what was significant in terms of the founder's plans and as resources are so scarce to this sector plans on any one of the seven areas was sufficient to allocate a firm to the 'survivors with growth' group. Lastly, it was considered that 'firm plans' was the relevant reference point since it implicitly measures the founders evaluation of the subsequent time period but abstracts from fantasy by requiring that the plans are backed with intent and resources.

For objectivity the ideal grouping would be success and failure, but when forced to adopt an alternative grouping that grouping could be considered to be a false 'acid-test'.Government policy, for example, should be interested not only in survival and failure but in identifying firms which have potential for growth. The alternative grouping is much more relevant for this purpose.

4.6 The Discriminant Runs

The variables described in chapter 3 were divided into 3 main categories; those which contribute to the measurement of the exclusiveness of the founders information base and those which the quantity of information which might be available to a founder and a third group which are theoretically irrelevant to any information based theory of entrepreneurship. 3 Discriminant runs were planned using the above three groups of variables. The aim was to test if the variables purporting to measure the exclusiveness of information performed better in discriminating between survivors and non-survivors than either the quantity of 'quantity of information' variables or the group of irrelevant variables.

4.6.1 Discriminant Run 1

The first discriminant analysis was run firstly with 8 variables The correlation matrix showed insignificant correlations between all variables except CUSWM and LCALCU which showed a correlation of -0.55. This high correlation probably arises because LCALCU and CUSWM are partially complementary. They measure the percentage of a firms customers which are 'local' and non-'local' but within the West Midlands respectively. Together with a third variable CUSFUR (% of customers outside the West Midlands) they add up to 100%. The third variable was excluded from the analysis because the

information it supplies is already included in the existing 2 variables. However the high correlation between LCALCU and CUSWM suggests that they also share some information. This would occur if CUSFUR was only a small percentage of the 100% so that the remaining 2 variables were highly negatively correlated. Since LCALCU had a standardized co-efficient in this first run, twice as large as CUSWM, CUSWM was excluded and the discriminant analysis run again.

In the second run of 7 variables all correlations between variables were insignificant. The percentage of cases correctly classified was 75% which is considerably larger than the 50% which could be expected by pure random assignment of the cases.This will however overstate the discriminating ability of the function as the discriminant function will of course perform better when it is classifying the cases by which it was determined. But the function nonetheless represents considerable discriminating ability on the basis of six variables.

The canonical correlation coefficient was 0.5961. This coefficient summarizes the degree of relatedness between the groups and the discriminant function. It is a valuable tool in judging the substantive utility of the discriminant function. A high coefficient indicates that a strong relationship exists between the groups and the discriminant function so that the function could be considered useful for predictive purposes and for classifying unclassified cases. A correlation coefficient of

0.5961 is not very high but is probably high enough for the function to have some utility.

The graph reproduced as Appendix 10 shows the degree of separation of the cases afforded by the discriminant function. The 2 groups are fairly well separated which reflects the reasonably high correlation coefficient. The exact degree of misclassification of cases by the discriminant function is indicated by the classification table, reproduced in Table 4.1. 8 of group 2 (non-survivors) cases were misclassified and 10 group 3 cases.

In terms of the theory being tested, the function has considerable substantive significance. The group centroids are the mean scores of the cases on the discriminant function. The survivor group has a mean score of 0.68561 and the non-survivor group one of -0.66708. indicating that the first group should score high on variables with positive co-efficients while the second should score high on variables with negative co-efficients.Because the co-efficients are presented in standardised form, they are directly comparable with those of other variables. The variables with the largest co-efficients, regardless of size, are the most important. In this analysis SALEXP (0.522), has the largest co-efficient of either magnitude. The theory would predict that sales experience would give rise to good quality (exclusive information) and, therefore, to relatively more successful firms. It emerges in this discriminant run as the single most powerful discriminant variable of either magnitude.It is also significant that this

important variable is not one whose measure would be influenced by being measured some months after start-up rather than at inception.This criticism could be levelled at LOCALC and LCALCU.

LCALCU and LOCALC also have large co-efficients of -0.461 and -.530 Both of these are measures of the 'localness' of a firm and the discriminant function indicates that a high score on either of these measures prejudices a firm to non-survival. This is consistent with the theory under test. They, along with SALEXP account for most of the discriminating ability of the discriminant function. LOCALC measures the existence of competitors in the local area and the localisation of the trade within the founders local area. It is defined as being the proportion of firms competitors in the West Midlands which were located within a five mile radius of the firm. To this extent it is also a very rough measure of localisation. It indicates the extent to which a founder is located in an area in which his trade is highly localised , for example lock-making in Willenhall. The importance and direction of this variable in the function is interesting from the point of view of theories of the localisation of industry. A jewellrey manufacturer would be unlikely to succeed outside the jewellrey quarter but the discriminant function indicates that such location behaviour does not guarantee success. The underlying factor in survival relates to the exclusiveness of the founders information and how many more start up to exploit it. This variable is considered to be an important one and, having a negative co-efficient, is consistent with the theory which

suggests that the more local a firm's operations the more local was the information base on which the firm was established. The localness of the information base increases the risk of over-exploitation and hence of failure or no growth. LOCALCs large coefficient is in contrast to SAMWOKs much smaller coefficient. SAMWOK is the number of the firms competitors in the West Midlands and in the function it is much less important than the measure of more 'local' competition, LOCALC.

LCALCU is another important variable in terms of the main thesis. It measures the proportion of the firm's customers which are within the local area, approximately four miles radius of the firm's location. Like LOCALC it is supposed to indicate the localness of the information base on which the firm was started. Firms who score high on LCALCU, the theory would predict, would be relatively unsuccessful and should fall into the 'non-survivor and no growth' group. LCALCU's negative co-efficient means that this variable is also consistent with the theory.

LOCALC has an alternative explanation of its inverse relationship on survival and growth in that it could be deemed to measure the degree of local competition which a firm faces. The greater the competition (the larger LOCALC) the more likely the firm is to fail or not to grow. However, the effect of localisation is not so straightforward. Manufacturing is often highly localised e.g. jewellrey quarter, lock making in Willenhall. There are considered to be economic benefits from localisation and new firms

TABLE 4.1

D I S C R I M I N A N T _ R U N _ 1

VARIABLES ENTERED:

SALEXP
LOCALC
LCALCU
LCSECH
RESLEV
SUPLOC
SAMWOK

NUMBER OF CASES BY GROUP:

GROUPS	
2	38
3	36
TOTAL	74

POOLED WITHIN-GROUP CORRELATION MATRIX

	SALEXP	SAMWOK	LOCALC	LCALCU	LCSECH	RESLEV	SUPLOC
SALEXP	1.00000						
SAMWOK	0.06916	1.00000					
LOCALC	0.27639	0.10624	1.00000				
LCALCU	-0.16459	0.29703	-0.08922	1.00000			
LCSECH	-0.11495	-0.27201	-0.29480	-0.21825	1.00000		
RESLEV	0.07539	0.01554	0.03781	-0.11569	0.11323	1.00000	
SUPLOC	-0.04766	-0.15786	-0.09551	0.08633	-0.15546	0.16675	1.0000

CANONICAL DISCRIMINANT FUNCTION

Canonical Correlation : 0.5691025

Standardized Canonical Discriminant Function Coefficients

SALEXP	0.55250
SAMWOK	0.18941
LOCALC	-0.46188
LCALCU	-0.53000
LCSECH	0.11176
RESLEV	0.21043
SUPLOC	0.47649

Canonical Discriminant Functions Evaluated At Group Means

GROUP	
2	-0.67328
3	0.69198

Classification Results:

MEMBERSHIP		NO. OF	PREDICTED GROUP	
ACTUAL GROUP		CASES	2	3
GROUP	2	38	29 76.3%	9 23.7%
GROUP	3	36	10 27.8%	26 72.2%

PERCENT OF 'GROUPED' CASES CORRECTLY CLASSIFIED: 74.3%

are deemed to benefit from externalities at such locations. This would not be consistent with the observation that firms with higher values on the variable LOCALC are more likely to fail or not to grow. The existence of benefits should have a positive effect on survival and growth while it could be considered irrational for new firms to consistently choose locations at which their chances of success were lower. Since a founder chooses his location to best exploit his business idea it must be the case that he does not consider the existence of many competitors to be a drawback. The location may in fact choose itself. For example, although many jewellrey manufacturers located in the jewellrey quarter fail, equally a new jewellrey manufacturer cannot hope to survive outside of the quarter. Given what has been established about the localisation of manufacturing it is not surprising that new founders choose such locations. But such behaviour is also consistent with the theory put forward in the thesis. The existence of competitors does not influence the new founders perception of the 'exclusive ' information which he aims to exploit. The reason he is more likely to fail is that his 'exclusive' information is likely to be less exclusive than the founder thinks in the area in which the trade is localised. For example, he may start up to exploit the small gap left by the demise of his previous employer. He may consider that he has fairly exclusive information on the content and state of employer's order books. But his fellow employees will have similar information and in an area where the trade is localised other firms may possess pieces of the information. Any or all of

these may act to exploit the same information, limiting the growth or precipitating the failure of some. In an area where a trade is localised the level of information about the trade will be fairly high since person-to-person contact within the trade will be high as will the visual collection of information pertaining to the trade. Where a trade is localised it will be much more difficult to possess 'exclusive' information.

In terms of the thesis the explanation behind LCALCU is similar to that of LOCALC. A large proportion of local customers indicates a high degree of localness in the information base of the firm. Information about customers in the local area is unlikely to be as 'exclusive' as knowledge of customers further afield, for the same reasons - high person-to-person contact and visual collection of trade information - that greater numbers of local competitors makes possession of exclusive information difficult.Innovation on the other hand, is associated with a broader range of contacts for technical and commercial information spread over a wider spatial area (Thwaites and Gillespie 1983 p.13). In terms of the thesis innovation is characterised by a higher degree of exclusiveness of the information base and innovating establishments would have a greater chance of survival.

A third variable in the function measuring localness of a firm and its information base is SUPLOC. On a scale of one to three it identifies the chief location of the firms major suppliers. 1 represents a local location that is within 5 miles, while 2 and 3

are locations within the West Midlands but outside the local area and locations outside the West Midlands respectively.Its large positive coefficient in the function indicates that firms with more distant suppliers have a greater chance of survival. In reverse this implies that firms with more local suppliers are more likely not to survive. The direction of SUPLOC is thus consistent with the other variables modelling the information base of the firm using operating linkages.

The variable with the next largest standardized co-efficient is RESLEV . This measures on a two point scale of zero and 1 whether leaving previous employer was involuntary or voluntary respectively. The negative coefficient indicates that a score of 1 i.e involuntary departure from previous employment increases the liklihood of survival. In the previous chapter it was suggested ,a priori,that founders who voluntarily leave their employment to set up their own business have better quality, that is more exclusive information, with which to do so. The results of the discriminant analysis tend not to support that view. A possible explanation for this result is that involuntary departure is often redundancy when an employer has gone out of business. Ex-employees may set up to take advantage of a gap left by the demise of their employer. Such a gap may support several small new firms and thus some firms will be given a slightly increased chance of survival. This effect will work against that postulated a priori. The small standardized coefficient suggests either that the variable is not an important

one or that 2 effects are working in opposite directions as suggested above.

The 2 other variables in the discriminant run, SAMWOK and LCSECH had very much smaller co-efficients and thus contributed little to the classification of the cases. SAMWOK, with a negative co-efficient of 0.1 measures the number of a firms competitors in the West Midlands and theoretically it should have a positive co-efficient. Its lack of significance as one of the measures of 'localness' could be attributed to the extent of 'localness. The variable is defined over the West Midlands area rather than the much more local area over which LOCALC (local competitors) is defined. This would suggests that the appropriate definition of 'localness' is something closer to the 5 mile radius used in several places in the questionnaire.

4.6.2 Discriminant Run 2

The aim of both the second and third discriminant runs was to establish a comparison to the relative importance of the results from testing the main theory in discriminant run 1. Thus their substantive significance is less important than their statistical significance.

Ten variables (described in Chapter 3) were used in Discriminant Run 2 which consisted of variables which measured quantity rather than quality of information. The first run of these variables

showed that 2, NOFON and TRDEXP, were highly correlated (0.711). On consideration this was because TRDEXP measured the total experience in years of all founders. NOFON was removed from the variables, having the smaller coefficient in the discriminant function, and the discriminant analysis run again.

The percentage of cases correctly classified was 69%, only just lower than the percentage in discriminant run 1 . The canonical correlation however is considerably lower, 0.3415, compared to the main discriminant run's 0.5691. This means that the substantive utility of the first discriminant function is greater than the second. The higher correlation coefficient indicates a stronger relationship between the function and the groups despite the fact that in the current runs both functions perform almost equally in their ability to classify the cases. Because the relationship is stronger in the first discriminant function it would be expected to perform better than the second run's function in predicting the outcome for unclassified cases

The percentage classification results indicate that this discriminant analysis performs only slightly less well than the first. However the second function does have 2 more variables than the first. More variables will generally add to the discriminating ability of a function. Most of the variables have relatively small coefficients but all except TRDEXP were positive. According to the group centroids this means that the greater the quantity of information (that is higher scores on the discriminating

variables) the greater the probability of survival. The main discriminating variables with positive coefficients were TECQAL, MANQAL, TOTCUS, and METHNO indicating that greater quantities of management and technical qualifications and larger numbers of customers and marketing strategies all contribute to survival. But individually the coefficients are much smaller than in the main discriminating analysis so that the ability of the function to discriminate is partly due to the larger number of variables.

TRDEXP is the only variable with a negative coefficient indicating that a high score on this variable increases the probability of non-survival. It is also the variable with the largest coefficient by far in the second analysis. Its negative coefficient can be explained by the exclusiveness theory which postulated that sales experience leads to the perception of good quality, exclusive information. Long experience in a trade on the other hand leads to myopia and militates against the perception of new opportunities.The inverse relationship between TRDEXP and growth and survival in Discriminant Run 2 emphasises the positive relationship with SALEXP in Discriminant Run 1 and helps to distinguish the interpretation of sales experience as being different from familiarity with trade generally.

While the effect of TRDEXP is open to fairly wide interpretation, it does strongly suggest that experience in a trade is not a guarantee of success and that something less related to time or

experience is at work determining survival and growth. The low co-efficients for TECQAL and MANQAL indicate that ability as measured by these measures acts positively on success but are by no means as important as SALEXP,LOCALC and LCALCU in Run 1. Individually, as discriminating variables, they have alternative explanations of their ability to discriminate between 'failures and no growth survivors' and' survivors with growth'.The most straightforward theoretical interpretation of SALEXP, for example, is that more sales experience obviously improves the ability of the founders to attract customers.However, if this simple explanation were the correct one then it would be expected that TOTCUS (the number of customers a firm has)would emerge as a significant variable in the second discriminant function.In fact its co-efficient suggests that it is unimportant in discriminating between the two groups. The implication is that SALEXP contains different information from TOTCUS, that is that SALEXP is not simply a proxy for the ability to attract customers. The alternative explanation put forward in this thesis is that sales experience gives rise to better quality information on which to start a new firm.

4.6.3 Discriminant Run 3

The final discriminant run contained all the other variables extracted from the questionnaire and not included in the other discriminant runs, a mixture of theoretically irrelevant and poorly specified variables. Thus it is not possible to draw substantive significance from the discriminant function in terms of a single theory.Unfortunately,to the extent that this third run

TABLE 4.2

DISCRIMINANT RUN 2

VARIABLES ENTERED:

TOTCUS
TRDEXP
TECQAL
MANQAL
AGEFON
METHNO
OWNBUS
BUSPRV
EMPEML

NUMBER OF CASES BY GROUP:

GROUPS	
2	38
3	36
TOTAL	74

POOLED WITHIN-GROUPS CORRELATION MATRIX

	AGEFON	TRDEXP	TOTCUS	OWNBUS	BUSPRV	EMPEML	TECQAL	MANQAL
AGEFON	1.0000							
TRDEXP	-0.0284	1.0000						
TOTCUS	0.1137	0.1217	1.0000					
OWNBUS	0.0239	0.0836	0.0822	1.0000				
BUSPRV	0.0922	-0.2414	-0.1604	0.0677	1.0000			
EMPEML	0.1083	-0.1061	0.0818	-0.0273	0.3506	1.0000		
TECQAL	0.0980	0.0011	-0.0068	0.1303	0.1461	0.0041	1.0000	
MANQAL	0.0746	0.0904	-0.0386	-0.0223	0.0330	-0.0075	0.3212	1.0000
METHNO	-0.0019	-0.1647	0.0066	0.0834	-0.0352	-0.0440	0.0361	-0.3663

	METHNO
METHNO	1.0000

CANONICAL DISCRIMINANT FUNCTIONS

Canonical Correlation : 0.3415815

Standardized Canonical Discriminant Function Coefficients

AGEFON	0.30624
TRDEXP	-0.41817
TOTCUS	0.50779
OWNBUS	0.26196
BUSPRV	-0.03753
EMPEML	-0.08040
TECQAL	0.25199
MANQAL	0.42303
METHNO	0.23106

Canonical Discriminant Functions Evaluated At Group Means

GROUP	
2	-0.34812
3	0.36860

Classification Results:

MEMBERSHIP ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP 2	3
GROUP 2	38	30 78.94%	8 22.2%
GROUP 3	36	16 41.7%	21 58.3%

PERCENT OF 'GROUPED' CASES CORRECTLY CLASSIFIED: 68.9%

was done as a comparison to the main run its statistical significance was impressive. Its canonical correlation, the extent to which the discriminant function was able to discriminate between the groups, was 0.490. was a full 10 percentage points below that of the first run's function but the percentage of grouped cases correctly classified, perhaps the most simple measure of the ability of the discriminant function was nearly 77% which exceeds that of the first function by about 1.5%.

Because of its a priori limited substantive significance in relation to the information theory of entrepreneurship, there is little point in interpreting in detail the discriminant function. But it is worth considering the variables with the largest coefficients to see if we can explain why the function performed so well.

Firstly the function includes INVEST (investment) and EMPLOY (employment) as discriminating variables with the second and third largest coefficients (0.427 and 0.431 respectively. High scores on these variables contributes to survival. This result would have been predicted but as pointed out in Chapter 3, investment and employment are not considered to have any a priori explanatory power in a theory of entrepreneurship.

The strength and direction of the coefficient of CUSMFR was unexpected. It measures the percentage of a firms customers who were other manufacturers. Two other variables, CUSDIT and CUSCON

Table 4.3

DISCRIMINANT RUN 3

VARIABLES ENTERED:

INVEST
EMPLOY
DIFFER
AVGCUS
SIXMTH
CONTAC
PERCEN
SECRET
COMADV
LAGCUS
CUSMFR

NUMBER OF CASES BY GROUP:

GROUPS	
2	38
3	36
TOTAL	74

POOLED WITHIN-GROUP CORRELATION MATRIX

	INVEST	EMPLOY	DIFFER	AVGCUS	SIXMTH	CONTAC	PERCEN	SECRET	COMADV
INVEST	1.0000								
EMPLOY	0.0416	1.0000							
DIFFER	-0.1080	0.0040	1.0000						
AVGCUS	-0.0974	0.1444	0.0243	1.0000					
SIXMTH	0.2214	0.1444	-0.0441	-0.1352	1.0000				
CONTAC	0.0176	0.0245	-0.2738	0.0720	-0.1559	1.0000			
PERCEN	0.0704	-0.0238	0.1284	0.3086	-0.1103	-0.0564	1.0000		
SECRET	-0.0434	-0.0153	0.1707	-0.1894	0.0527	-0.1248	-0.2102	1.0000	
COMADV	0.2411	0.1071	-0.0056	-0.0105	0.2305	-0.1147	0.0948	-0.1811	1.0000
LAGCUS	-0.0180	0.1840	-0.0544	0.3491	-0.0327	0.0871	0.0086	-0.2593	0.0925
CUSMFR	0.0627	0.0025	-0.1042	-0.2590	0.1834	0.0240	-0.3096	0.0352	-0.1365

	LAGCUS	CUSMFR
LAGCUS	1.0000	
CUSMFR	-0.0175	1.0000

CANONICAL DISCRIMINANT FUNCTIONS

Canonical Correlation : 0.4902387

Standardized Canonical Discriminant Function Coefficients

INVEST	0.42777

EMPLOY	0.43146
DIFFER	0.04947
AVGCUS	0.00842
SIXMTH	-0.04128
CONTAC	0.02345
PERCEN	0.04305
SECRET	0.22673
COMADV	-0.36190
LAGCUS	0.22218
CUSMFR	-0.75216

Canonical Discriminant Functions Evaluated At Group Means

2	-0.55413
3	0.55413

Classification Results:

ACTUAL GROUP		NO.OF CASES	PREDICTED GROUP MEMBERSHIP 2	3
GROUP	2	38	31 81.58%	7 18.42%
GROUP	3	36	11 30.6%	25 69.4%

PERCENT OF 'GROUPED' CASES CORRECTLY CLASSIFIED: 75.7%

the percentage of the firms customers who were distributors or final consumers respectively, were excluded from the final discriminant run because they were highly correlated with CUSMFR. This is because as a group their values sum to 100%. CUSFUR was selected for inclusion because it had the largest coefficient in the run where all three were found to be highly correlated. The importance of CUSFUR is perhaps explained by the substantial number of sub-contractors in the sample. Their customers were almost exclusively other manufacturers and their level of operation tended to be around breakeven due to their large numbers. This is the effect the variable appears to have picked up. But in the economy in general the same effect of a large percentage of customers in manufacturing would not be expected. CUSFUR needs to be respecified to reflect the information it is reflecting, that is the nature of subcontracting activity in the new firm sector.

4.7 Conclusion

While alternative interpretations are possible, as a group the important discriminating variables reinforce the theoretical explanation attributed to them in the thesis. Only the exclusive information theory of entrepreneurship can adequately and consistently explain the direction of influence of all of the function variables. However, the idea of 'exclusive information' is somewhat abstract and vague. A theory of entrepreneurship based on it can never be as straightforward as,for example, one based on profitability. Variables which might measure exclusiveness of information have to be found and, as is indicated above, because

there is no direct measure of this aspect of information, the variables used as indicators or proxies may be capable of alternative interpretations. And even if adequate indicators or proxies can be found there might still be problems in their measurement. The discriminant analyses described above represent an attempt to overcome all of these difficulties and to test the 'exclusive information' theory of entrepreneurship indirectly by looking for a higher failure and no growth among firms whose information base was considered to be highly local.

To an extent the analysis was confirmatory. The main discriminant function had both substantive and statistical significance and its statistical significance was greater than that of the second discriminant run testing the alternative theory. However the third discriminant using all the irrelevant variables performed almost as well as the main discriminant run. While reasons for this have been discussed above, the performance of the alternative functions puts the performance of the main function in perspective. While it clearly has some discriminating ability, this is limited with the variables as at present specified. The concept of the quality and particularly the exclusiveness of information is elusive and before alternative theories are pursued there seems to have been established a sufficient case for the importance of exclusiveness to warrant further search for improved proxies for or models of this aspect of information.

CHAPTER 5

THE SUPPLY OF ENTREPRENEURSHIP

5.1 The Entrepreneurs

If we have in mind the stereotype of the entrepreneur, the "Arkwrights, Owens and Wedgewoods" (Storey 1982 p.76) or in more recent times the Sinclairs, then it could safely be concluded that such individuals are rare. They are Schumpeter's dynamic disruptive force providing 'fuel for the capitalist engine'. But the theory put forward in the thesis accepts a much broader conception of entrepreneurs and entrepreneurship. Entrepreneurs are not necessarily dynamic but are described as alert and profit seeking. In the writings of Kirzner, Schultz and Casson it is much easier to recognise the entrepreneur as an ordinary individual:

> "we all of us know someone who is an entrepreneur.... a property developer, a small businessman, or just someone who knows how to turn a fast buck."
>
> Casson 1982 p.1.

This conception of an entrepreneur makes them potentially much more numerous than Schumpeterian entrepreneurs. Schultz (1980) also envisages a very large number of entrepreneurs:

> "The supply (of entrepreneurship) is not restricted to a small part of the adult population. One observes that many people, if not all, have some ability to supply entrepreneurship when there is a demand for it."
>
> Schultz (1980) p.444.

The efficiency of the economy will necessarily be greater, the greater the supply of entrepreneurs in the economy. Casson (1982 p.11) postulates an 'efficiency gap' between countries with fewer indigenous entrepreneurs. The country with more entrepreneurs will consistently allocate its resources better than a country with fewer entrepreneurs, giving rise to an efficiency gap between them. Presumably this reasoning can be applied at regional or even sub- regional level and obviously the quantity or supply of entrepreneurship in an economy is very important to basic efficiency of the allocation of resources[1].

The amount of entrepreneurial activity can increase while the number of individuals identified as entrepreneurs remains constant. Alertness could be heightened or search intensified without there being any charge in the numbers of entrepreneurs. But the supply of entrepreneurial activity will have increased. It has been suggested that the intensity and amount of search and alertness would be stimulated by adversity, exceptions or problems (Nelson and Winter 1982) as well as the opportunity cost of the entrepreneur's time (which we would expect to be lower under unemployment).

It would appear impossible to establish accurately the supply of entrepreneurship available in the economy, and if we can't establish the supply of entrepreneurship we can't have a

predictive theory of entrepreneurship since it is the supply which defines its own role there being no exogenous demand.

However, the nature of the commodity makes it more or less impossible to measure entrepreneurs or entrepreneurial activity. Entrepreneurial activity is in the first instance the 'alertness' to or 'ferreting out' of opportunities. But the extent to which individuals are alert and ferreting out information is only partially described by for example new independent entry which can be measured. Equally not all those who are alert will discover opportunities but their alertness nonetheless contributes to the efficiency of the economy in the same way that a postulated pool of potential entrants ensures the efficiency of the perfectly competitive model by providing the threat of competition

5.2 Empirical Investigation Of The Supply Of Entrepreneurship[2]:

However, in the same way that the exclusive information theory of entrepreneurship and new firm formation was tested retrodictively, it is possible, in a limited way, to draw some conclusions about the supply of entrepreneurship ex post facto. The following analysis uses the new micro-data set compiled as part of the research project. The data set, its main characteristics and how it was compiled, are described in Appendix 3.

According to the theory developed in the thesis 'failure' has a particular significance. The observation of failure, indicates primarily the overexploitation of information, and if information is being overexploited the extent to which this is so is at least a partial indicator of entrepreneurial activity. The ratio of failures to survivors indicates in this view in a limited way the willingness and ability of a population to respond to discovered opportunities. The number of survivors on its own will reflect the number of and extent of the opportunities discovered. Therefore, that number does not reflect entrepreneurial activity but the (unknown ex-ante) extent of entrepreneurial opportunities. The proportion of all new entrants who fail, however, indicates the extent to which opportunities were 'oversubscribed' and in relation to the survival rate is independent of the number or extent of entrepreneurial opportunities. While this is a highly simplistic view of failure since it abstracts from other determinants of failure (even although they are considered secondary) it can still make a contribution to an estimate of the state of entrepreneurial activity, and might provide an interesting source of inter-regional comparisons. This way of evaluating or measuring entrepreneurial activity is different to Beesley's (1955) and not surprisingly produces a different result. Beesley compares the entry rates of the north-west and

3

south-west zones of the West Midlands and finds the entry rates differ (although the failure rates do not). He concludes that the

north- west zone provides an environment more conducive to entrepreneurial activity than the south-west.

In examining the failure and survival rates among new entrants, however, any conclusions will depend critically on the level of disaggregation of the data. The theory of entrepreneurship suggested that 'the field of opportunity' or the information environment is highly fragmented. The level to which new independent entrants should be disaggregated before calculating survival and failure rates should reflect and equal this fragmentation of the information environment. Ideally we measure the entrepreneurial response to a single profit opportunity. In practice what can only be achieved is a disaggregation of the data to the number of entrants entering a particular trade (measured at 5 figure SIC level) in a particular area(measured at the 4 figure postcode level e.g.WV10)Therefore, the data on new entrants can validly be disaggregated to and examined at the trade and sub-regional area level. The following empirical examination of the 'supply' of entrepreneurship examines the data at various levels; 5 Figure SIC, postcode area and a combination of the two.

5.3 Entrepreneurship By Area:

Applying the above analysis to a breakdown of new entrants by postcode area enables a comparison of entrepreneurial activity in the major sub-regions of the West Midlands covered viz Dudley, Walsall, Birmingham City Centre, Birmingham Inner Ring and Outer

Ring and Redditch. Widely differing failure rates between sub-regions would, in the argument developed in this Chapter, indicate differing degrees of entrepreneurial activity (or differing supplies of entrepreneurship) in the sub-regions. The higher the failure rate the greater the 'over-response' to entrepreneurial opportunities.

The breakdown of *new* entrant survivors and failures using the postcode combinations detailed in Table 5.1 shows the proportions of survivors and failures to be fairly constant across the sub-regions. Table 5.1 indicates that the proportions of survivors and failures over the eight sub-regions does not vary significantly from the population means of 39.8% for failures and 60.2% for survivors. Only the City Centre shows a distinctly higher than average failure rate of 48.1%. The implication is that relative to the number and extent of opportunities there is greater entrepreneurial activity in the City Centre. This finding is quite consistent with the traditional view of the City Centre as being a particularly stimulating environment. It is not unexpected that the entrepreneurial response to 'City Centre opportunities' is greater. Close communications promote the dissemination of information while the City Centre itself provides a low cost environment placing new firm formation within the means of a greater number of individuals.

Across the other sub-regions, however, the survivor/failure proportions are remarkably constant. This occurs despite the

Table 5.1

SURVIVORS AND FAILURES BY GEOGRAPHICAL AREA

POSTCODE	FAILURES	SURVIVORS	
B	125 39.4%	192 60.6%	317 24.0%
CC	50 48.1%	54 51.9%	104 7.9%
R	16 39.0%	25 61.0%	41 3.1%
C	104 38.8%	164 61.2%	268 20.3%
DY	87 41.2%	124 58.8%	211 16.0%
WS	73 38.0%	119 62.0%	192 14.5%
WV	70 37.6%	116 62.4%	186 14.1%
COLUMN TOTAL	526 39.8%	795 60.2%	1321 100.0%

Area Definitions by Postcode:

CC	City Centre	B1-B5
C	Inner City excl.City Centre	B6-B19
B	Outer City	B20-B96
R	Redditch	B97,B98
WS	Walsall	All Postcodes WS
WV	Wolverhampton	All Postcodes WV
DY	Dudley	All Postcodes DY

widely varying numbers of total entrants into each area from 41 in Redditch to 268 in the Birmingham Inner Ring area. Considering the factors put forward as likely to influence the supply of entrepreneurship, particularly the socio-cultural influences, it would not be expected that entrepreneurial activity would vary intra-regionally. Inter-regional and almost certainly international differences on the other hand would be expected.

5.4 Entrepreneurship By Trade:

The preceding section indicated how the entrepreneurial activity of an area could be assessed and compared to the failure rates of the sub-regions of the West Midlands. Equally important are inter-trade differences in entrepreneurial activity. Disaggregating to this level it should be possible, again by comparing the survivor/failure ratios, to see if there are any notable inter-trade differences. Appendix 7 provides the trade breakdown at five figure level of the Standard Industrial Classification. It appears that at this level of disaggregation there is much more variation about the population mean. In SIC's where the number of entrants was sufficient for the percentage in the two groups to be meaningful, the following Standard Industrial Classifications all had markedly higher than average failure rates (see Table 5.2):

In 339.4, 354.2, 364.3 and 399.2 the proportion of failures actually exceeds the survivor rate which on the argument of this

chapter means that entrepreneurial response to the opportunities was more than twice that necessary to exploit the opportunities.

Table 5.2: SIC's With Higher Than Average Failure Rates

No. Of Entrants	SIC	Description
14	339.4	Mainly ducting and ductwork for air conditioning.
16	354.2	Industrial instruments.
24	364.3	Mainly printed circuits.
39	381	Motor vehicle and accessories.
76	396	Jewellrey.
26	399.2	Metal windows and door frames.
131	832.1	Steel stockholding.

These are not trades in which the capital cost of entry is particularly low compared to the other trades in the study so this would not explain the high entrepreneurial response and subsequent failure (which is the interpretation accorded to it in this chapter). On the other hand, the following SIC's have failure rates considerably below average:

Table 5.3: SIC's With Lower Than Average Failure Rates

No. Of Entrants	SIC	Description
20	337.4	Lifting gear.
32	393	Bolts, nuts and screws.
24	399.1	Metal furniture.
50	832.5	

Neither of these results, the markedly higher and markedly lower failure rates in the above mentioned groups, could be accounted for by absolute numbers of entrants since the analysis was restricted to those trades with more than ten entrants. (Those with less than ten entrants were excluded because the proportions of survivors and failures were exaggerated by the small numbers). The conclusion is that entrepreneurial activity varys considerably more from trade to trade than it appeared to do between the sub-regions of the study area.

The empirical evidence on exit examined in Appendix 2 indicated the existence of a significant although perhaps not strong relationship between entry and exit. The theory developed in the thesis accounts for this since it would predict that the greater the number of entrants acting to exploit limited opportunities, the greater would be the proportion of failures. But the number of opportunities within trades will obviously differ and a greater number of entrants will not necessarily result in a larger proportion of failures if the higher entry rate reflects a greater number of opportunities.

Thus the relationship between the numbers of entrants and the failure rate is not completely determined. The failure rate will depend not only on the numbers of entrants but on the number and extent of entrepreneurial opportunities. It has been discussed in this chapter how we cannot determine accurately the supply of entrepreneurship while Chapter 2 indicated that it was the role

of entrepreneurs (and not economists of bystanders) to discover and define entrepreneurial opportunities. Retrodictively, however, it is suggested here that the survivor/failure ratio contributes information to two areas of uncertainty:

a)The number and extent of opportunities:the survival rate indicates in terms of numbers of new firms surviving the extent of the opportunities discovered by entrepreneurial activity (see Chap.1 on the role of entrepreneurship in generating information).

b)The supply of entrepreneurship: entrepreneurial response, the willingness and ability to act is indicated by the proportion of failures among all entrants.

5.5 Trades With A Single Entrant[4]:

Neither of the above propositions can be proved directly. However,the implications of the theory are clearest where only one new firm is established to exploit a particular opportunity. A minimum requirement of the theory as developed is that where only one entrant exploits an opportunity that entrant should, ceteris paribus, survive. If the opportunity exists and is sufficient to support one new firm then if only one entrant acts to exploit it he has a maximum chance of survival.(He is not certain to survive since the theory does not rule out other

reasons for failure only places them secondary to 'overexploitation'). Empirical evidence supporting this prediction would enable the two propositions above to be held with more confidence and perhaps suggest the degree to which failure is accounted for by the 'over-exploitation' theory.

Investigating this in terms of the data available requires disaggregating it to a level compatible with the fragmentation of entrepreneurial activity. Ideally we would aim to measure the entrepreneurial response to individual opportunities but disaggregating the data to the five figure SIC level may be the nearest it is possible to get to the individual opportunities. At this level, in practice what is being measured is the aggregate response to all opportunities within a single trade.

Appendix 8 presents the same information as Apperdix 7 but for ease of interpretation the standard industrial classes, at the five figure level, have been ranked according to their number of entrants. This shows fairly clearly that of the twenty trades where there was only one entrant, 15 or 75% were survivors. Similar results were found in the 13 trades with two entrants. The failure proportions were on average relatively low. 7 of the trades recorded 100% survival (both entrants surviving) while the other 6 trades recorded one survivor and one failure. None of the trades had two failures, that is a 100% failure rate.

There are no independent criteria against which to judge the above results but it does seem that compared to trades where there are three or four entrants the chances of survival in a one or two entrant trade are apparently greater. In six of the trades with three entrants each the proportion of failures was twice that of the survivors while another trade in this group had a 100% failure rate. Of the six trades which had four entrants each, two had a failure proportion three times higher than the survival rate. Equally, however, two of the trades had survival rates three times higher than their failure rates and the remaining two trades had equal survival and failure rates. The variations in survival and failure proportions between trades increases as the number of entrants into individual trades increases.

A further breakdown of the population data gave rise to 202 trade x area sections with one or two entrants (this is not reproduced in the thesis because of its length). Carrying out the same analysis as in the previous section, 70% of the 202 trade by area sections with only one or two entrants recorded either 100% survival or one survivor and one failure. Only 30% recorded 100% failure rate. Thus even when the level of disaggregation is considerably increased the prediction about trades with only one or possibly two entrants seems to hold, which in turn provides evidence in support of the main thesis.

However, with reference to the first analysis (breakdown by trade only) although a high percentage, 75%, of one entrant trades

recorded 100% survival, 25% did not. Either this reflects that the 25% overestimated the opportunity, a plausible interpretation since the fact that they were the sole entrants could reflect that the potential for profit was deemed marginal by other potential founders or alternatively the 25% reflects the extent of failure for reasons other than overexploitation. The same reasoning could be applied to the second analysis where the breakdown is by trade and area. 70% of the trade-area breakdowns with only one or two entrants recorded 100% survival. The 30% where there was 100% failure again reflects either that the opportunity could not support even one firm or alternatively it reflects the extent of failure for reasons other than overexploitation. Unfortunately there is no way of discerning which of these reasons is the correct one or if as is more likely both are correct, the relative importance of each. At least, however, the above results should be borne in mind when drawing conclusions about the 'overexploitation' thesis in trades with more than one or two entrants.The implication is that not all failure is due to 'overexploitation' and, therefore, conclusions about the efficiency of overexploitation must be circumscribed to an extent. It is still postulated that 'overexploitation' is an important process but the empirically determined proportion of failures among all entrants may not be completely ascribable to overexploitation.

The explanation of the failure rate as being due to over-exploitation is, in the main, a plausible one. The most obvious

alternative explanation of failure is that the individual decision calculus is at fault. Differences in skills and abilities of various kinds were entered into the Discriminant analyses and did not emerge among the most significant discriminating variables. In terms of the results of this chapter it is difficult to account for the inter-trade variations in failure rates by differences in individual capabilities. There is no reason why these should vary between trades which are very similar in structure. For example metal furniture (399.2) has a particularly low failure rate while metal windows and door frames (399.1) has a particularly high failure rate. If these two trades drew their new firm founders from different levels of occupational groupings then differences in individual capabilities would be potentially relevant in explaining differences in failure rate. But in the sample survey this was not evident. The large majority of founders were blue collar, the only exceptions being one from management, two from research and development and several involved to a greater or lesser degree in sales activity. The main empirical finding that on average over trades and sub-regions the proportion of failures is 40% of all entrants is interpreted as indicating that entrepreneurial opportunities are oversubscribed by 66%. For every opportunity sufficient to support one firm, 1.2/3 firms are established. The only proviso on this figure is that there may be other reasons for failure. But the argument of the thesis is that the survivor/failure ratio is significant and abstracts from individual failings and lack of ability because such is the economic system that:

"..... the award goes to the relatively fastest, even if all the competitors loaf."

Alchian 1950 p.213.

Simplistically this implies the economic system has a 'quota' to fill and will select 'the relatively fastest' but the extent of the quota is a more important factor in failure than the 'speed' or ability of individuals.

The 66% 'oversubscription' (40% non-survival/60% survival)to entrepreneurial opportunities seems substantial but there is no standard against which to compare it or other studies producing a similar statistic. It does seem to indicate substantial entrepreneurial activity backed by the willingness and ability to act.

5.6 Conclusion:

This view of the significance of the failure/survival proportions is unorthodox but is an unavoidable implication of the theory developed in the thesis. Overexploitation of incompletely exclusive information will result in some of the entrants early demise. But the degree of precision of the above figures, for example, opportunities 66% oversubscribed, reads uncomfortably where it is suspected such precision is inappropriate to the subject matter.The implication that opportunities come in definable 'units' is reminiscent of the earlier problem of

reducing information to 'hubits'.However, to suggest the precision indicated by the figures in the previous section is inappropriate in the context is not to deny the underlying theory and implications and in the absence of any other method of measuring the supply of entrepreneurship, the survival/failure proportions among entrants at least contributes to our understanding of the former.The failure proportion does seem sufficiently high to justify the general approach of the thesis to failure (away from the individual decision calculus and towards an evolutionary economic system approach).

Notes:

1. This is not contradictory to the idea of entrepreneurs creating the future by using their imaginations. It is not suggesting a determinate analysis where the role of entrepreneurs is simply to discover opportunities which exist but have been overlooked. But there are limits to opportunity despite entrepreneurship being creative rather than determined. The exercise of imagination is constrained to the possible and probable (see 2.2.2). Nor does the concept of 'imagination' preclude more than one individual exploiting the same opportunity. Imagination is constrained (see 2.2.2) as is search activity (2.2.3) and spontaneous absorption (see 2.2.1) and although individuals' information fields are, strictly speaking, unique (see 2.3) nevertheless it is likely that several individuals working in the same trade, perhaps for the same firm and in the same area, will perceive similar information and come to similar conclusions.

2. There is no discussion of the financial assets of individuals in influencing the supply of entrepreneurship. Entrepreneurial activity is independent of the ability to acquire resources(see 5.1). Resources are only required to actually form a new firm. But even in the second part of the chapter where the number of new firms formed is evaluated, the financial ability to form a new firm is not explored. It is assumed, given the numbers of new

firms formed in the trades under examination and the information about investment gained from the sample survey, that the financial requirements, although always operative, are not prohibitive. Financial requirements will always bar some potential entrants from actually establishing but equally low costs will never be a sufficient condition for entry (Oxenfeldt 1943 p.123n, Leibenstein 1968 p.81).

3. Beesley's north-west zone is roughly defined as Wolverhampton while the south-west zone comprises Dudley.

4. The phenomenon of the single entrant is defined over the 3 -3.5 year period of the study which is of course arbitrary but has the virtue of being a fairly short period. Trying to disaggregate the data to match the level at which individual opportunities are postulated to occur, the shorter the period the more likely that this level has been achieved.

CHAPTER 6

POLICY RECOMMENDATIONS

6.0 Introduction:

The previous chapter has emphasisied that survival and failure among new firms is viewed as a trial and error process of the type suggested in the evolutionary model of economic change. This, together with the development of the importance of monopoly in information possession, has fairly fundamental implications for government policy in the area of new firm development. The implication of the evolutionary model of entrepreneurial activity is that government intervention in the process at worst jeopardises economic progress and at best results in a waste of resources[1]. Due to the high rate of infant mortality described in appendix 3 any subsidy to promote new firm formation will inevitably subsidise many eventual business failures. Attempts at selective assistance would also be ruled out by the evolutionary approach. Niether the government, nor its delegates, have expertise in 'picking winners'. New enterprises or new products or processes can only be tested by the market. No individual or organisation has the necessary knowledge to pronounce on their suitability for the current economic system (this is not to say that some people may not have good hunches but overall the market is the only perfect judge in a market or mixed economy).

6.1 Provision Of Information:

Several studies on the role and performance of small and new firms make recommendations about providing information to help this sector. But in terms of this thesis, entrepreneurship, and in particular new independent entry, does not proceed with knowledge but actually has the role of generating information. Oxenfeldt (1943) appears to deny entrepreneurship this role. He suggests that one type of information which should and easily could be made available is profit information. This would dispel existing ignorance and direct entrepreneurial activity to the trades in which new businesses are most desirable. As a policy recommendation it is totally at odds with what the information theory of entrepreneurship put forward here would suggest. The role of the entrepreneur is to exploit information which is overlooked. He 'ferrets out' profitable information. And again the argument of the last chapter is that it is entrepreneurial activity which uncovered the opportunities. The implication of Oxenfeldt's policy recommendation is that the opportunities exist and entrepreneurs should receive signals from government to direct them to the opportunities.

Johnson (1981) in his survey of unemployment and self-employment makes similar suggestions to Oxenfeldt (1943) on the provision of information. He acknowledges that information in the self-employment area must of necessity be more nebulous in character:

> "No 'vacancy' list exists as such."
>
> (Johnson 1981 p.12)

He suggests a "positive approach to information provision on self-employment opportunities", but unlike Oxenfeldt who thought profit figures would be useful to would-be entrepreneurs, Johnson does not make specific suggestions about what this information might consist of. It also begs the question of where or from whom this information for entrepreneurs or information on entrepreneurial opportunities might come. The point has already been made that 'economists' or 'by-standers' would not have this type of information unless they themselves were acting as entrepreneurs. It follows that to provide this type of information it would be necessary for the government or its agents to turn entrepreneur.

The idea of publicising entrepreneurial opportunities is also at odds with the theory because opportunities only have profit potential when they are exclusive and this aspect would not survive publication in a bulletin of self-employment opportunities. The danger would be that having been published no individual would perceive them as exclusive and hence having profit potential and thus no one would act to exploit them.

Johnson also suggests that this information about opportunities might be aimed at people whose 'natural' perceptions of such opportunities are very limited or non-existent but for whom the probability of success in self-employment is high. This idea is definitely not compatible with the information theory of entrepreneurship which postulates that it is exactly the role of

entrepreneurs to look for opportunities. The individual Johnson describes would be managers.

In a more general vein, Johnson advocates longer term information provision on self-employment to help shape attitudes and stimulate interest at school level in the potential of self-employment. This idea is commensurate with the postulates in the thesis.It was argued in Chapter 2 that an adequate supply of entrepreneurs could be assumed if individuals could be considered to be routinely comparing the returns from employment and self-employment in their labour resource allocation decision. In terms of the thesis this would equate to encouraging alertness rather than actually attempting to provide the information on which to form a new firm.

6.2 Education And Training:

Schultz (1980) suggests that over time the stock of entrepreneurship or the 'allocative abilities' of the populace can be increased by education. He claims education is a strong explanatory variable in the speed of adoption of new farming techniques. While the adoption of new farming techniques is barely within the idea of entrepreneurship put forward in this thesis, the point he makes that education enhances the ability to perceive and clarify problems and ways of solving them obviously fits well into a theory of entrepreneurship which relies on

individual alertness to information as the basis of entrepreneurial action.

It could however prove impossible to teach people how to spot opportunities.The theory followed in the thesis denies the existence of a group of 'economists or bystanders'(Alchian 1958) who without being entrepreneurs themselves possess entrepreneurial knowledge.One author however while accepting this limitation of education suggests that it may be possible to train entrepreneurs how to assess such opportunities once perceived.But the theory would predict that education has at best a limited role in promoting the assessment of the viability of opportunities, the major uncertainty facing potential founders being the plans of other potential founders.

6.3 Finance

Empirically the high rate of infant mortality suggests that more than a sufficient number of new firms are being established. If lack of finance is not a factor preventing start-up then the theory would question the usefulness of financial assistance in a new firm's earliest stages when what is being tested by most new firms is the value and extent of the information which they are acting to exploit.

The theory would predict that since individuals are less likely to have exclusive information its profit potential will be uncertain

which will be reflected in the amounts which individuals are willing to commit to the new business. They are generally unwilling, for example, to mortgage their homes to raise finance. It is the quality of the idea rather than the founder's resources which limits the amount committed. This is obviously also Hannah's (1984) experience. He states that:

> "it is rarely necessary to mortgage one's house to raise finance which is available far more readily for good ideas than is often thought."
>
> Hannah 1984 p.228.

This is also compatible with Knight's (1921) view that confidence in his own judgement is one of the most important characteristics of an entrepreneur. Since he also backs his judgement with his own capital, it is reasonable to assume that the amount of capital he is willing to commit will reflect his perception of the quality of information on which his judgement is based.

The firm's attitude to external finance provides evidence of their perception of what influences their chances of survival at this tentative stage of their development. While all would accept outright grants, several studies (Lloyd 1980 p.43) including the thesis have noted the resistance of these firms to part with equity and to capital assistance schemes with any kind of strings attached. Most were reluctant to second mortgage their home and seemed reasonably satisfied with the amounts which they had been

able to commit to the business. The reluctance to part with equity is a finding which has usually occasioned surprise since it represents a way of gaining extra finance and spreading the risk while most other ways of augmenting capital entail an increase in the risk borne by the founder. However, the theory of entrepreneurship in the thesis makes this behaviour less surprising. The theory postulates that failure in the early stages after setting up will be the result of impersonal market forces eliminating an excess of new firms. If new firm founders perceive this conciously or unconciously and their caution in gradually committing resources indicates that they see their chances of survival in terms of probabilities rather than thresholds, then their reluctance to part with equity is entirely rational. The extra finance will not increase their chances of survival sufficiently to induce them to part with equity which will reduce their return should they be one of the 'lucky' firms selected by the economic system. This may seem abstract but in order for it to be the correct interpretation of new founder's behaviour all that need be shown is that new firms consider their chances of success as being related to the quality of their business idea - size of the market gap or the degree of slack they have perceived rather than to the size of their operations or the quality of their machinery or premises. Finance and parting with equity can alter the latter but not the former and if success is perceived as depending on the former then founders will not be responsive to initiatives to alter the latter.

It is likely that the amount of finance committed reflects a founder's evaluation of the quality of his information rather than a general lack of finance. The researcher would agree with Lloyd (1980):

> ".... the next, more confident, stage in the firm's development that the impact of the assisting agencies might be more in evidence."
>
> (Lloyd 1980 p.43.)

In terms of the theory developed here (that a proportion of new firms are destined to failure because they represent over-exploitation of information) to put financial resources into new firms in their earliest stages would be wasteful because of the failure rate which the theory suggests cannot be altered by additional finance. The founders themselves are cautious at this stage, aware of the probability of failure. The next stage, at which the economic system has selected its 'lucky' survivors, is thus aptly described by Lloyd (opp.cit). as more confident.

6.4 Reducing The Failure Rate:

Government intervention might also take place to reduce the failure rate among new firms. In terms of the evolutionary model this would be an attempt to prevent economic natural selection. Burton (1983) describes this as the 'government-as-company-doctor' notion. If natural selection operates on the 'survival of the

fittest' criterion then it is difficult to defend this type of intervention, particularly when on the argument of this thesis failure is the natural result of over-exploitation of information and over-exploitation of information is a natural occurrence in a system which aims to generate information to resolve previous uncertainty. Burton's (1983) point is slightly different. He suggests that the new enterprise sector is essentially an experimentation area and the implication of the evolutionary approach is that the market is the only perfect judge of the actions submitted to it for testing. Government has no expertise in picking winners and any intervention to assist some firms may increase their chances of survival vis-a-vis other new entrants or alternatively the government may have backed losers in which case the outcome represents a waste of resources. In any case the economic system left alone would pick the eventual winners and on the theory outlined in the thesis the government cannot, by intervention, improve on the failure rate (although it is possible that if they 'back the winners' initially government assistance could improve the efficiency of their chosen firms and thus improve efficiency overall).

6.5 Conclusion:

The theory put forward in this thesis about the nature and role of entrepreneurship in economic theory severely circumscribes the role which government can take in encouraging entrepreneurship.

The theory gives to the entrepreneur a major role in the generation of information and relies on the pursuit of profit to stimulate this entrepreneurial activity. It is thus fundamentally free enterprise in nature and any notion of government intervention is bound to give rise to contradictions.

The government inasmuch as it influences the whole social climate can encourage 'alertness' or the supply of entrepreneurship by its own attitude towards self-employment. While the present government has moved some 70 initiatives aimed at helping business start-ups and small firms, it is arguable that their greatest effect has not been through their provisions but through raising the awareness of individuals to the possibilities of self-employment. The sample survey of this research and that of Dicken and Lloyd (1978) indicates that the majority of firms do not benefit from these initiatives but the attitude of the government to new firms is clearly favourable and this could be expected to increase the numbers seriously considering self-employment.

Notes:

1. The 'ripple effects' of the failure of a large enterprise make this view oversimple (although Burton 1983 holds to the implications of the evolutionary model even in such cases and dismisses ripple effects as a fallacy). However,

in the new firm sector where the resources involved are minimal and the ripple effects likely to be non-existent the implications of the evolutionary model are more easily accepted.

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APPENDICES

APPENDIX 1

ENTRY: THEORIES AND EMPIRICAL EVIDENCE

The aim of this Appendix is to indicate the inadequacies of entry theory in explaining new firm formation. The theory and empirical work of the major studies in the field is examined, a section being devoted to each of the most frequently hypothesised determinants of entry. The discussion and conclusions reflect the main interest of the thesis as being new independent manufacturing firms rather than entry as a whole.

1. Introduction:

In economic theory, new independent firm formation would generally be explained in terms of the theory of entry. Entry is a fairly thoroughly researched field but the empirical work is characterised by great variability in the data bases which makes comparisons difficult. Nor has the fairly extensive empirical work produced many strong conclusions. The results are often weak and sometimes contrary to theory. The most frequently tested determinants of entry into manufacturing are :

1. Industry profitability.

2. Capital cost of entry.

3. Industrial structure.

4. Growth.

The theoretical and empirical significance of each of these is examined below.

1.1 Entry And Industry Profitability:

Traditional economic theory predicts that entry occurs in response to excess profit and continues until the excess profit is competed away. Therefore we would expect entry to be positively correlated with industry profitability. Gorecki (1975) found the expected strong positive correlation with entry as did Mansfield (1962) and Craig (1977). However, the limitations of the data bases used in these studies makes it unlikely that they were measuring all entry. Gorecki (opp.cit.)

used data based on enterprises with at least 100 employees and Mansfield (opp.cit) measures only new entrants who survived to the end of his study period. The average size in employment terms of new independent manufacturing firms was found by Hamilton (1982) to be 12.3 and in the sample from the present study to be 3.8 employees. On this evidence it seems likely that Gorecki's data base must have excluded the majority of new independent firms. He is more likely to be measuring the establishment of branch plants or subsidiaries by established companies who, in allocating their capital, would be expected to consider the profitability of the industry vis-a-vis other investments. Hence a positive correlation of his 'entry' with profitability is not unsurprising. Mansfield's (opp.cit.) study was confined to four industries: steel, petroleum, tyres and autos. Since these are all capital intensive industries it is also unlikely in this case that 'entry' measured new independent firms. Storey (1982 p.63) stresses thus that Mansfield's work particularly is incomplete and could be misleading.

Hamilton's (1982) study on the other hand, which can lay claim to substantial generality and nearly complete coverage of 'entry' finds profitability an insignificant explanator of entry.

Orr (1974) has a similar finding although again the entrants were measured net (unavoidably) and was based on 'reporting corporations' i.e. those with sales in excess of $.5 million or assets greater than $.25 million, both of which make it unlikely that the entrants were representative of this researcher's population. Duetsch (1975) found that the price cost margin explained no more than 2% of the

variation in entry rates and Webbinck (1979) finds industry profitability significant but only just.

Thus the empirical evidence on profitability as a determinant of entry would seem to be possibly against this being the case but at the very least the evidence is inconclusive.

Oxenfeldt's (1943) study is particularly lacking in generality but he does indicate why one would not expect entry to be positively related to profitability in any study where entry substantially measured new independent businesses. He suggests that entry is not based on profitability since the new founder will not necessarily be in a position to enter the most profitable trade, his expertise more likely being in another less profitable/unprofitable trade. He argues that the decision to found a firm will be taken not because it is the most profitable but because individuals usually pursue the most desirable of the known alternatives. The only other known alternative to the founder's existing trade may be unemployment hence:

> ".... most studies indicate that a sizeable majority of proprietors were formerly engaged as owners or employees in the line in which they establish themselves and in which they failed.... it is the desire (in many instances) to retain patronage already won that leads businessmen to settle in the industry they know."
>
> Oxenfeldt(1943)p.87-88

This suggests that a new founder may know of highly profitable trades but if this is in a trade not known to him he is unlikely to pursue

it. The existence of some patronage or the knowledge of work available in his own trade will prove a stronger influence than general notions about profitability.

1.2 Entry And The Capital Cost Of Entry:

The studies of Oxenfeldt (1943), Mansfield (1962) Hanse (1962), Orr (1974), Cross(1981) and Hamilton (1982) all found the capital cost of entry,or alternatively the investment required to establish a firm of minimum efficiency size, a significant and sometimes strong determinant of entry.

The results would appear incontrovertible but it is the argument of this researcher that the result is, to a large extent, trivial and that capital cost of entry as a determinant of entry is undertheorised, and that the relationship would break down under certain conditions.

It is incontrovertible that the entry of new independent businessmen into fields such as motor manufacture, metal manufacture and petro-chemicals is barred by the high capital intensity and large minimum efficient scale of such operations. It is to be expected then in any attempt to explain inter-industry variations in entry rate that capital cost of entry would emerge as a significant determinant. However, all this amounts to theoretically is that entry by independent individuals will occur where entry is possible by independent individuals.Since capital intensity varies only slowly over time, it cannot account for variations in entry over a shorter period of time and it does not explain the absolute amount of new firm formation occurring at any point in time. It explains why entry is happening

in metal treatment as opposed to metal manufacture but it doesn't explain the number of new firms forming in any particular trade. Capital cost of entry as a determinant of entry has no theory to explain how it might act as a spur to entrepreneurship. It does not provide a reason for the decision to start up a business. It only shows why some industries will be chosen rather than others. Thus it may be a good predictor while conditions are stable i.e. when the rate of growth or the rate of decline is fairly constant but since it has no theory about the generation of entrepreneurship. It will not be such a good predictor when underlying conditions change.It is a good predictor of the distribution among industries of a constant (rate) of entrepreneurship. It is a good explanator of inter-industry differences. It will emerge as a significant determinant of inter-industry variations in entry rates but the capital cost of entry would be unlikely to model very closely the rate of entry into any industry over time.

The extent to which capital cost of entry lacks explanatory power can be seen by considering it in conjunction with another piece of empirical evidence.It has been observed (Oxenfeldt(1943),Johnson and Cathcart (1979) et.al.) that a large majority of new founders set up in the trade in which they were previously employed.

It must be assumed in invoking capital cost of entry as a determinant of entry that there is a pool of entrepreneurship which gravitates towards forming new firms in sectors with low capital costs. But it has been observed:

a)That a large majority of new founders set up in the trade in

which they were previously employed (Oxenfeldt(1943),Johnson and Cathcart(1979) et.al.).

b) That a substantial number of new founders are unemployed immediately prior to setting up.

Thus if the trade in which a founder was engaged in and has recently been made redundant from is a major determinant of his choice of trade to set up in, then capital cost of entry as a determinant of entry loses most of its explanatory power because, as Oxenfeldt (1943) pointed out the founder will choose an alternative which is known to him and he is motivated in this to retain patronage already won in the industry which he has known. In this case capital cost of entry would still be a good explanator of inter-industry differences in entry but not of entry over tine. What we really need to explain is not why, for example, metal treatment is chosen as opposed to metal manufacture but what spurs entrepreneurship from within the metal treatment industry. Determinants such as growth and profitability provide a reason for founding a new firm. Capital cost of entry provides no reason for entrepreneurship it can only direct entrepreneurship which exists e.g. if the motor industry went into decline it would not be possible for some redundant workers to redeploy themselves in setting up their own firms in the way that some redundant workers from the fastener industry chose to do.

The capital cost of entry is thus statistically significant but theoretically limited and even weak. In stable conditions it is a good indicator of inter-industry differences in entry but the results are, in terms of predicting intra-industry entry over tine, theoreti-

cally trivial.

1.3 Entry And Industrial Structure:

Industrial structure is a singularly difficult variable to measure as a determinant of entry. Any simple proxy of industrial structure is likely to inadequately describe the structure. Hamilton (1982) measured the proportion of small firms in the industry and capital cost of entry both to proxy industrial structure whereas Gudgin (1978 p.136) uses the proportion of small plants (employing less than 20) to reflect the ease of access to the industry. Yet other studies use the entry rate as a proxy for the proportion of small or young firms in an industry.

The empirical evidence on 'proportion of small firms in the industry' as a determinant of entry is almost unanimous. Cross (1981) finds it positive and significant (however Cross's variable was a more complicated one), Gudgin (1978 p.137) found that the only significant determinant of his full entry rate was the percentage of plants employing less than 20 in the base year and this variable explained almost half of the inter-industry difference in entry rates (he also tested rate of growth of employment). Wedervang (1965) also observed a Spearman Rank Correlation Co-efficient of 0.83 between entry rates and the proportion of small plants in 13 industrial sectors. Collins (1972), however, found that the entry rate in 20 industrial sectors was uncorrelated with the percentage of small plants (those employing less than 11 people).

Fothergill and Gudgin (1984 p.203) also suggest that at least until recently the most widely accepted theory of spatial variation in new

firm formation was that linking a high proportion of manufacturing employment in small firms to a high rate of new firm formation. They challenge the recent finding of Gould and Keeble (1984 p.189) who found that plant size was only a secondary or tertiary influence on new firm formation rates, being subsidiary to the numbers of non-manual workers in the workforce as an explanator. Fothergill and Gudgin (1984) explained Gould and Keeble's finding about the significance of non-manual employees as due to the coincidence that formation rates and employment in non-manual occupations both differ sharply between urban areas and rural areas. In urban areas the formation rate is low as is the proportion of non-manual employees. Rural areas show higher formation rates and have a higher proportion of non-manual employees. This challenges Gould and Keeble's finding of variation in new firm formation rates between rural and urban areas and the association between new firm formation and non-manual employment breaks down when rural and urban areas are analysed separately. However, although they successfully challenged non-manual employment as a determinant of new firm formation, Fothergill and Gudgin were not able to dismiss Gould and Keeble's finding that for East Anglia the evidence did not support the view that local plant size is the key determinant of firm formation rates in the region. To add to the confusion Whittington (1983) also found no significant relationship between the proportion of small manufacturing plants (defined as manufacturing plants employing less than 10 employees) and his measure of entry (VAT registrations 1980 and 1981). (But he did find also in common with Gould and Keeble (ibid) that the proportion of manual workers exerted a negative and significant

influence on entrepreneurship as measured by Whittington).
Whittington's results thus agree with those of Gould and Keeble but are contrary to those of most other researchers. However, comparability is reduced by the fact that Whittington's measure of proportion of small plants, following Storey (1982), includes only firms employing less than 10 employees. Gudgin's (1974) by contrast includes firms up to 500 employees. As variables it is doubtful if these two alternatives can be measuring the same phenomenon theoretically. In addition Whittington's empirical analysis suffers from all the weaknesses of VAT registrations (Gangully 1982) as a data source for the dependent variable, entry.
Again the overall conclusion on 'proportion of small firms' as a determinant of entry must be that as a determinant its case has not yet been proved.

Beesley's seminal work on the differences in entry rate between the N.W. and S.W. zones of the West Midlands highlights the simplicity of the above measures of industrial structure. Beesley's analysis of industrial structure breaks the structure down not into size bands but into stages of production and examines the composition of the structure of each zone at each stage. While his conclusions are more sophisticated, he concludes that it is

> "the complex of juxtaposed and interdependent processes in the N.W. zone .... which favouring experimentation with new combinations of parts to form product innovations .. .. (provides) .... the opportunity to combine parts represented an incentive to form new enterprises".
>
> Beesley 1955 p.47.

One piece of his evidence does bear directly on the other empirical findings discussed here. Contrary to the studies quoted, Beesley

found that the N.W. zone had proportionately more larger establishments than the S.W. zone. This finding was only tangential to his study since he was investigating the effect of industrial structure on entry in greater depth than the studies quoted here which aimed to proxy industrial structure by the proportion of small firms in the industry for the purposes of explaining inter-industry differences in entry rates. He suggests the size of firms in the area as only a contributory factor to the favourable entry and survival record of the N.W. zone of the West Midlands:

> "for example, the fact that there were proportionately more larger establishments in the N.W. zone's metal industries than in those of the S.W. may have given the zone as a whole more experience of management techniques".
>
> Beesley 1955 p.57

Since this was mentioned almost as an aside, it has not been fully exploited in subsequent studies (except Johnson and Darnell (1979) who sought to disprove it without broaching the mainstay of Beesley's findings). The richness of Beesley's (opp.cit.) work is that he explains the entry rate through industrial structure but by formulating a theory of entrepreneurship - postulating a process whereby a favourable industrial structure actually promotes and stimulates entrepreneurship and new firm formation.

The author's quarrel with the hypothesis that new firm formation is positively related to the proportion of small firms in the industry (or area) is that like the 'capital cost of entry' determinant it lacks explanatory power. Statistically it is significant but

theoretically it is weak. Researchers interpret the variable in two main ways:

1.As a proxy for capital cost of entry.

2.As an indicator of the level of entrepreneurial training and encouragement present in a region or industry.

All the weaknesses of capital cost of entry as a determinant of entry apply to 'proportion of small firms' as a variable when it is used to proxy capital cost of entry. The second interpretation of the variable fudges the issue of the 'departure' and 'destination' industries. As an explanator of the dependent variable, entry, the 'proportion of small firms in the industry', can only reflect industrial structure in the destination industry› Either the theoretical explanation of this variable is based only on the effect of industrial structure in the 'destination' industry which considerably limits the interpretation of it as a variables. If it is the 'proportion of small units' in the 'destination' industry which is the independent variable then it is difficult to think what, except ease of access, it implies.Or alternatively if it is assumed that entrepreneurs usually stay within their own trade making 'departure' and ' destination' industries the same (Johnson and Darnell 1979 suggest this is true in a majority of cases), then the possible interpretation of the variable is increased. It can encompass interpretations of the variable which draw on conditions in the 'departure' industry e.g. the influence of size on providing an entrepreneurial training ground. In that case a positive correlation between entry and the proportion of small units in an industry

reflects that employees in smaller firms will have observed entrepreneurship at closer quarters in the form of their employees. They are also likely to have better all round experience relevant to the varied tasks they will have to perform in self-employment. This might be true of the very smallest firms, perhaps up to 100 employees. But Gudgin's cut-off point for measuring 'proportion of small firms' in an industry is 500, in which case the above explanation of the variable 'proportion of small firms in the industry' is less appropriate. With such a definition of a small firms the variable 'proportion of small firms' resembles a proxy for 'capital cost of entry'. If this assesment of the variable is fair then that variable is again more appropriately grouped along with all cost reducing factors, as facilitators. It can facilitate entry and new firm formation but it cannot instigate it (Leibenstein 1968) .We need a theory of instigation prior to a theory of the influence of facilitation. The criticism is that the poor empirical results are due to the application of facilitators rather than instigators as determinants of entry. This is particularly true of the new firm formation studies which have been carried out over fairly short time periods, usually from 4-15 years. Facilitators such as a favourable industrial structure or capital cost of entry are unlikely to vary over that comparatively short time period and could not model,except spuriously,entry rates over time as opposed to entry rates between industries or regions at a point in time.

1.4 Entry And Growth:

Unlike the 'capital cost of entry' or 'proportion of small firms in the industry', growth like profitability actually indicates the source of the stimulus to entrepreneurship and new firm formation. Potential new firm founders are supposed to be stimulated by the perception of opportunities indicated by growth in an industry. For this to be the case the potential new firm founders would have to be able to exploit the growth along the same lines as their employer. The researcher would question the ability of independent individuals to take advantage of the same opportunities currently stimulating growth in established firms in the industry. Additionally or alternatively new firm formation may be stimulated as a by-product of growth in the established firms of an industry. Where there is growth there will also be capacity and financial constraints. A firm may pass up some opportunities or run down some less profitable area of its activities to reallocate resources into a growth area. But suggesting a proliferation of new firms as a by-product of growth in established firms through the process outlined above is very different from suggesting that exactly the same forces creating growth in established firms are responsible for the growth in numbers of new firms. If it is some kind of 'organisational slack', a by-product of mainstream growth, which is responsible for new firm formation then the process of new firm formation will be much less straightforward than that suggested by new firm formation in an industry or trade as a result of growth in the industry or trade. One would need some evidence of the existence of the right type of slack and also how it varies with the business angle.

The evidence on organisational slack would be much more difficult to collect but since 'organisational slack' is the by-product of growth it first falls to show a positive correlation between growth and new firm formation.

The evidence on growth is again variable and really permits no definite conclusion as to the effect of industry growth on entry rates. Wedervang found a strong positive relationship for his recovery period 1933-37 but a negative one for the depression, 1930-33. As Gudgin (1978 p.136) points out this must be due to the fact that entry rates remain either high or low to some extent regardless of industry performance i.e. that entry rates are to some extent independent of industry growth. However, Wedervang also finds a tendency within each industry for entry rates to rise with a bettering of performance of the industry as a whole even although industry growth does not explain inter-industry differences (the differences in entry rates being much less over time than intra-industry differences). Collins (1972) found entry rate significantly correlated with growth using a rank correlation. Firn and Swales (1978) on the other hand found at the regional level that the West Midlands conurbation showed a lower rate of formation of new independent manufacturing firms than Glasgow despite a much better economic growth performance.

The most detailed work, however, has been carried out at an intra-regional level. As long ago as 1955 Beesley found that the higher rate of entry in the N.W. zone of the West Midlands compared to the S.W. was:

"in spite, rather than because of the growth of demand for the products of localised metal industries".

Beesley 1955 p.56

In other words the higher entry rate in the N.W. zone was achieved despite the hypothesised adverse direction of growth. Gudgin too found that within the East Midlands growth rates were unimportant in determining inter-industry entry rates. He found that industry employment growth was barely significant as a determinant of entry and tended in any case to be negatively correlated with entry. Despite the frequency with which the positive relationship between growth and entry rate is hypothesised Gudgin does not find this result particularly surprising:

"it is not entirely unexpected given the fact that the desire for independence appears to be a more powerful influence on potential entrepreneurs than the need for profit".

Gudgin opp.cit. p.139.

Johnson and Cathcart (1979) also find employment growth to be statistically insignificant as a determinant of entry although their insignificant result is positive in direction. They suggest that this result is brought about by the combination of two effects:

1. The myopia of a section of new firm founders who, although the push to set up on their own comes from their poor prospects in a currently slow growing industry, establish their own new firm in the same industry.

2. The fact that low growth industries are relatively unattractive

to the more 'opportunistic' type of entrepreneur.

These two effects will work in opposition to each other. Slow growing industries will have many new entrants of the first type and few of the second. A fast growing industry will attract many entrepreneurs of the second type and none of the first since craftsman type entrepreneurs will not, on the theory above, leave their employment to set up as independents when their prospects within their employment look good. The net effect will generally be that the estimated co-efficient is likely to average out to zero.

Although the evidence is confused the weight of it would seem to fall to there being no significant positive relationship between growth and entry rate. In fact more recent research has pursued the opposite line of enquiry that growth might be negatively related to entry, and more specifically that rising national unemployment is closely associated with an increasing number of firm formations. Oxenfeldt (1943 pp.120-3) and Steindl (1945) have both argued for the strength of unemployment as a factor encouraging individuals into self-employment. Johnson and Darnell (1979) add to this the effect of capacity utilisation. Increasing capacity utilisation will signal to the employee the existence of more profitable self-employment opportunities than previously. Organisational problems and bottlenecks from production at high levels will intensify the signals. The effect this has on encouraging formations will be modified by the unemployment rate which is a useful proxy for perceived prospects in paid employment. Increases in the unemployment rate decrease expectations from paid employment and thus reduce the

opportunity cost of being self-employed making new firm formation more likely. The estimated equation was a particularly good fit, with an R^2 of around 0.9.

1.5 Entry and the Unemployment Rate

The unemployment rate variable as a determinant of entry would be criticised by the researcher on the theoretical grounds that it is interpreted as an estimate of the opportunity costs from becoming self-employed. But as Leibenstein(1968p.81)pointed out such considerations cannot describe the stimulus to new firm formation, they can only facilitate it. As such they cannot explain new firm formation.

The capacity utilisation variable on the other hand is interpreted as actually indicating the existence of opportunities for self-employment thus describing a real basis for forming a new firm. However, one cannot ignore the impressive statistical result so the author would suggest a re-interpretation of the unemployment rate variable to suggest that rising unemployment also reveals opportunities for self-employment for at least two reasons:

1. Unemployed individuals have more time to look for opportunities.

2. Closure of plants leaves market gaps and previous employees experience helps them to formulate new opportunities 'out of the ashes' of their former employer.

1.6 Conclusion

This Appendix has aimed to establish a divide between theorised determinants of entry which the researcher describes as facilitators of entry and those which are genuine determinants. The failure of

entry theory to explain why new firms are formed (as opposed to explaining inter-industry or inter-regional differences in entry rates) is marked. Low costs do not explain new firm formation. Schumpeter himself argued that most firms are formed as a result of a positive motivation and purpose. He distinguished one exception; retailers, for whom low opportunity costs seemed sufficient to instigate a new business:

> "many people take up small retail businesses .... for no other reason than that they do not know what to do with themselves or as a temporary occupation during unemployment."
>
> Schumpeter 1934 p.94

Schumpeter describes these as the exception which implies that for other types of firm it should be possible to identify a specific start -up stimulus.formed.Similarly Leibenstein(1968)points out that the existence of secondhand machinery and low costs generally are not sufficient to explain the existence of new firms. Thus on this reasoning, unemployment, low capital costs of entry or a large proportion of small firms in the industry are unlikely to explain new firm formation. They are more aptly described as facilitators of entry. Growth and profitability, while they could stimulate/instigate entry, are in reality unlikely to be the explanation of new firm formation. Lindbeck (1980) came to a similar conclusion:

> ".... the extreme micro-character and specificity of knowledge and competence required for successful entrepreneurship are so great that general deductions on the basis of economic analysis, including trade theory, are of rather limited interest for

individual firms."

Lindbeck 1980 p.394.

If this is the nature of entrepreneurship it is not surprising that empirical work on entry based on industry level variables has had poor results. Macro concepts such as profitability growth, capital cost of entry are at odds with the micro-character of entrepreneurship.

Appendix 2

EXIT AND INFANT MORTALITY

This Appendix looks at the theory and empirical performance of the determinants of exit. The empirical performance is found to be often weak and occasionally contradictory. It is suggested that this might be explained in one of three ways, two of which are discounted, the third then being expanded upon. Involving the negative correlation between age and exit frequently found in the literature it is put forward that young and infant deaths are an important sub-component of total exits. Exit theory is then re-examined in the light of this finding to assess the applicability of the traditional determinants to infant deaths.

2.0 Introduction :

The literature on entry is a great deal more extensive than the literature on exit. This is slightly anomalous since if the aim of looking at entry is to assess and encourage new firms as providers of employment and output in the economy this might equally be accomplished by preventing exit. The underlying philosophy would seem to be that death is natural and shouldn't be tampered with, whereas birth could perhaps be facilitated and stimulated.

This observation is important because new entrants themselves rapidly break down into two sub-groups - survivors and failures. Explaining the early demise of a significant proportion of new entrants necessitates consideration of the determinants of exit with these infant deaths in mind.

The existing literature on exits or closures of firms or plants is fairly sparse, and has tended to concentrate on measuring the extent to which a specific factor or event was responsible for closure. For example Lloyd and Mason (1978) investigated the effect of Compulsory Purchase Orders on plant closures in Inner Manchester or Wedervang on the effect of succession problems on closure. Cross (1981 p.111) in fact concludes that:

"too few studies exist to allow meaningful comparisons to be made".

Cross (1981 p.111).

His own treatment of closure was aimed at assessing the role of employment decline in the new firm formation process. The data bases on closure in the various studies also differ widely as does

the focus of interest in each, both of which factors make comparison difficult. Two exceptions to this are the studies by Gudgin (1978) on the East Midlands and Hamilton (1982) for Scotland, both using Factory Inspectorate data. While Gudgin limited his explanators of closure to four:

1. Entry rate.

2. Growth of sector.

3. Growth of surviving plants.

4. Percentage of plants employing fewer than 20 operatives.

Hamilton had five explanators:

1. Entry rate.

2. Profit and growth.

3. Proportion of small units in the industry.

4. Capital cost of entry.

5. Rate of productivity increase.

Since these are the two most comprehensive studies on the subject, the following discussion concentrates on these mentioning others where appropriate. Gudgin found that only entry rate appeared to be significantly related to closures across industries. Hamilton, on the other hand, presenting his findings in greater detail than Gudgin, finds profitability and capital cost of entry to be significantly related to closure in the hypothesised direction, growth to be

significant in the direction opposite to that hypothesised and the SHSM (proportion of small units in industry) generally insignificant. Entry rate was a significant explanator of exit only if growth is removed from the equation.

2.1 Exit And The Capital Cost of Entry:

Essentially what is hypothesised is that any barrier to entry will also likely serve as a barrier to exit by established firms (Caves and Porter 1976 p.44). In particular the existence of assets, durable and specific, to the firm commanding low returns reduces the current costs of the firm and thus promotes survival.

However, Hamilton (1982) is the only one who finds the hypothesised relationship to be significant. Neither Caves and Porter (1976), Marcus (1967) nor Henderson (1979) find any evidence of a negative relationship between exit and the capital cost of entry.

2.2 Exit And Profitability:

Whether firms are or are not making profits might be expected to influence their ability to stay in business. Marcus (1967) finds the proportion of firms in each industry reporting either zero or negative net income, a highly significant determinant of exit.Both Mansfield (1962) and Hamilton (1982) also found industry profitability to be significant and negative determinants of exit.

However, as Hamilton (1982 p.66) points out with reference to Marcus's study this finding is unlikely to take us by surprise. What is more interesting in terms of exit are the factors which lead to profitability or the lack of it. Marcus takes his model to a second stage

and finds that the proportion of loss making firms in the industry is in turn determined by the age and asset size of firms in the industry. Oxenfeldt too postulates that profitability will influence exit but suggests that it is high entry depressing profitability in an industry which is the primary influence.

2.3 Exit And Entry :

Both Gudgin (1978) and Hamilton (1982) find entry to be a positive and significant explanator of exit, Caves and Porter (1976) find it positive but barely significant and Henderson (1979) finds it positive but insignificant. Although the results are not particularly strong in defining a positive relationship between entry and exit rates, it does exist and probably, Hamilton (1982) suggests, explains the paradoxical effect suggested by the positive relationship between growth and exit. It is in this view the high entry rate which accompanies growth which accounts for the high exit rate. This view is given credence by Hamilton who finds that when he leaves growth out of his equation, entry rate becomes a positive explanator of exit.

The theory behind the relationship between entry and exit turns out in most cases to be a theory about the relationship between exit and industrial structure. Hamilton notes this "interaction between explanators" i.e. the relationship between entry and industrial structure. He examines the role of entry rate as a explanator of exit in three main studies; Gudgin (1978), Henderson (1979) and Marcus (1967).

In Gudgin (1978 p.193) and Henderson (1979) the entry rate is regarded as a proxy for the age structure of the industry: the higher the rate

of new entry the larger the proportion of young and so vulnerable firms. However, although entry rate was considered as a proxy for the proportion of young and vulnerable firms in the industry (Hamilton also regards entry rate as a proxy to proportion of small firms in industry as his regression equations include only either SHSM or NI% but not both in any one equation) neither Gudgin, Henderson nor Hamilton could in their various approaches find a significant relationship between the rate of exit and the proportion of small firms in the industry. Since 'entry rate' as a determinant of exit performed better than the measures of 'proportion of small firms in the industry' either these measures were poorly specified or we are to conclude that the proxy i.e. entry rate, was a better explanator than the measure of the actual variable. Alternatively the theoretical explanation of 'entry rate' as a significant determinant of exit is something other than those suggested by the variable 'proportion of small firms in the industry.'

Marcus (1967), however, improves markedly on these results by citing as the main determinant of exit the average proportion of firms in each industry reporting either zero or negative net income and then looking for the determinants of this proportion. He finds that the PLF for the 17 industries he examines is largely explained by age and asset size and concludes that high exit rates are to be found in young and/or small-scale industries. The results are strongly significant but profitability is the overall determinant of exit rather than industrial structure. Oxenfeldt (1943) also argues that it is profitability indirectly through the entry rate that determines exit. High rates of gross entry by depressing industry profits causes

high exit rates. Again entry rate is cited albeit indirectly as a determinant of exit. However, if entry is postulated to depress profitability in the industry generally, thus prompting exit, it would seem to exclude industry profitability as a determinant of entry in contradiction to orthodox economic theory.

The statistical relationship is strong but the theory does not seem adequate to explain the consistent significance of entry as a determinant of exit. While the researcher would deny the possibility of prediction of exit over time, there is clearly room in the theory of entrepreneurship developed in later chapters for exit to increase with entry.

Possibly measuring infant exits against entry would be even more revealing.

2.4 Exit And 'The Proportion Of Small Firms In An Industry':

Since theoretically young and small firms are considered to be vulnerable, industrial structure variables such as the proportion of small firms in an industry should in theory be positively associated with exit rates. Empirically it was an insignificant explanator in Hamilton's (1982 p.170) regression analysis, although it did emerge as significant at the 95% level when tested on its own against the dependent variable, exit. However, the relationship is not continuous throughout the entire range of SHSM17 levels. While there is a significant difference in exit rates between industries with 0-39.9% of small units in the industry and those with 40-59.9%, there is no significant difference in exit rates between those with

40-59.9% and 60-100% of small units in the industry. Gudgin (1978 p.193) on the other hand testing only this small units variable against the dependent variable found the correlation insignificant. However, both Gudgin (opp.cit. p.184-5) and Henderson (1979p.24) found a significant negative relationship between actual employment size and plant closure as does Cross (1981). Cross found that 80% of the plants closing between 1968 and 1977 employed less than 100 and explained this simply: ".... size of plant .... determined whether it closed or contracted".

Cross 1981 p114.

Large plants can react to adverse conditions by reducing the size of their operations while a similar adjustment by a small firm will effect its demise. That this simple explanation is the right one is further indicated by the fact that, for the same time period, the plants employing less than 100 accounted for 80% of closures but only 40% of the employment lost. Thus there was substantial shedding of labour by large firms but little actual closure. Further, approximately 40% of the closures of plants employing less than 100 turns out to be in firms employing less than 2. Again, evidence that large firms contract but small firms go out of business.

In summary, the proportion of small firms in an industry seems to perform poorly as a determinant of exit in regression analyses while the theoretical explanations of it as a variable vary. Some postu-late, without any in-depth explanation, about the vulnerability of age and size while Cross suggests that subject to the same unfavourable economic forces, large firms can contract while small firms contracting similarly will cease to exist.

2.5 Exit And Growth:

Both the theory and evidence on growth as a determinant of exit are somewhat confused. Gudgin (opp. cit. p.193) finds it a negative but insignificant explanator, the direction of the causation, however, at least in the direction hypothesised. Hamilton (opp.cit. p.170) finds contrary to hypothesis, that growth is a strong positive determinant of exit. Henderson (1979) found no statistically significant relationship between either an industry's output or employment growth and it's closure rate. Beesley(1955 p.54) considers that there is little correlation between the exit rate and boom and depression. In his West Midlands study he found that despite a difference in growth rate of a factor of 5 between the two zones:

> "there is little difference in the chances of survival between the two zones".
>
> Beesley (1955 p.54).

Cross (1981 p.102) on the other hand found decline in demand to be a major reason given for closure in the Closure and Redundancy Records of the DOE.

The theory behind growth as a determinant of exit has already been raised (2.4). Straightforwardly it would be theorised that growth in an industry would decrease the exit rate as firms prospered. Yet the statistical results are either insignificant or contrary to this hypothesis. As a variable it is clearly undertheorised. At least one contradiction is evident. If entry is positively related to growth and exit varies positively with entry then logically exit varies positively with growth. Clearly growth as a negative deter-

minant of exit is not consistent with the above sequence and what we need is a theory about the positive relationship between exit and entry directly. The apparently paradoxical statistical finding of a positive relationship between exit and growth should not, on the above view, be theorised about directly.

2.6 Exit And Productivity Change:

Hamilton (opp. cit. p.74)is surprised at the lack of interest in this variable as a determinant of entry. He hypothesises that the greater the increase in productivity made by an industry the lower will be the rate of closure in that industry. He finds the variable insignificant in his regression analysis but, comparing the mean entry rate of industries with low productivity change against the mean of those with high productivity change, he finds the difference in entry rate significant and in the hypothesised direction. Caves and Porter (1976) on the other hand, using unit cost growth as a measure of productivity change found it a significant explanator but in the opposite direction to that hypothesised. It is difficult theoretically to be conclusive about the expected direction of the effect of productivity change. Hamilton suggests that increases in industry productivity, reflecting presumably progress and prosperity in the industry, the lower will be the rate of closure in that industry. However, an industry characterised by large changes in productivity could be experiencing substantial technological change and may be in a state of flux with older firms under the burden of obsolete equipment having difficulty competing with newer firms entering to take advantage of

the new technology. Thus it is possible that exit would be positively related to productivity change.

As was the case with the theory and empirical evidence on entry, the study of exit has not produced any conclusive results as to determinants of exit. There are at least three possible reasons for this result:

1. The databases inadequately enumerate exits.

2. The theory is inadequate.

3. The phenomenon of exit does not define an homogenous group to which the theory can be applied.

It seems unlikely that the database is inadequate. Apart from not being sufficiently timely to record the most short-lived businesses, the Factory Inspectorate records are a superior source developed with a great deal of rigour for the purposes of research by both Gudgin (1974 et.al.) and Hamilton (1982).

Another possibility is that the theory is inadequate. On the whole the theory is actually well rationalised and fairly straightforward, but the strength of contrary results calls the theory into question. An alternative but related explanation is the one the researcher develops. The poor results may reflect the fact that 'exits' as a group are not homogenous and specifically that there may be important sub-groups within exits. If there is more than one type of exit and the theory on exit only addresses itself to one type of exit then, depending on how the total of exits is composed of the different

types of exit, the lack of homogeniety will affect the empirical results .

It is suggested here that, at least, the group defined as 'exits' breaks down into two sub-groups:

1. Middle and old age deaths.

2. Young and infant deaths.

These two groups are important because, it is hypothesised, the determinants of exit will be quite different for each group. It is hypothesised that existing theory about exit is more applicable to middle and old age deaths than to young and infant deaths. The distinction, if correct, would be important since business failure is highly concentrated among the ranks of young firms (Burton 1983).[1]

2.7 Young And Infant Deaths: An Identifiable Sub-Group?

Is there any evidence that young and infant deaths are an identifiable and significantly large sub-group of all exits? No work has been specifically aimed at answering this question. What evidence there is has to be gleaned from studies examining all exits. Most of the studies point to there being a relationship between age and deaths of firms suggesting that youth (and/or small size) make a firm more vulnerable and, therefore, more likely to die. The positive relationship between age and size, however, makes it more difficult to isolate the relationship between age and exit. On the whole, however, size is an indifferent explanator of exit in its own right. Gudgin (1978) and Hamilton (1982) find several measures of the proportion of small

plants/firms in an industry, insignificant in explaining exit (although entry as a proxy for youth and small size usually emerged as significant, see 2.3). Exceptionally Whitelegg (1976), studying Stoke-on-Trent, provided evidence that points strongly to a size effect. Constructing a probability matrix of transitions in firm size over time from a master file of all firms records as functioning in 1951,1966 and 1971, he found that the probabilities of firm sizes 1-2, 3-7 and 8-20 at T , not existing at T ,were 0.75, 0.56 and 0.51 respectively. However this size effect was observed over a time period T to T , 1951 to 1966. Fifteen years is too extensive a time period in the life of a small firm for it to be only a size effect. Since the average life-cycle of small firms was found to be around nine years, Whitelegg' s findings could be as much the effect of time as of size.

While the effect of size on exit rates produces variable results, the effect of age can be isolated more clearly. What the researcher is looking for is a marked age effect on exit around the most youthful and infant stages, to identify infant deaths as a large and signficant sub-group of all exits. Marcus (1967) finds that his 'proportion of loss-making firms' variable which is closely related to exit rates, declines sharply up to age five indicating a close relationship between exit and age up to 5 years. Thereafter no consistent relationship with age is observed. This is supporting evidence for the thesis developed here that infant and young deaths are a significantly large part of all exits. Marcus (opp. cit.)is indicating that 'economic childhood' is limited to the first five years and further that the first two of these years present the

greatest hazard.[2] Gudgin (1978) also finds an inverse relationship between age and mortality, although for the purposes of this study his time period of measurement is too protracted for his results to be used as evidence of the existence of a relatively large sub-group of young and infant firms. Beesley (1955 p.52) provides a breakdown of all exits into two groups; the exit of new entrants within his time period 1923-38 and other exits.His figures indicated that there were few exits in the first few years of life of a firm. However, the Factory Inspectorate inspect on a two year cycle and thus, as has detailed elsewhere (3.1) they would tend to miss many firms whose life-span was less than two years.

Marcus's results probably provide the best empirical evidence for the existence of a relatively large sub-group of infant and young deaths, while only Beesley's study provided contrary evidence (the limitations of his data in respect of detecting infant exits is detailed above). If this large sub-group exists then the empirical results will depend on to what extent the theory fits both the old and middle age group as well as the young and infant exits. The following sections examine the extent of the applicability of traditional exit theory to young and infant deaths.

2.7.1 Profitability As A Determinant Of Young And Infant Exit:

Whether profitability is a good explanator of exit has been examined in a previous section. This section is aimed at assessing its theoretical relevance to young and infant exit.

This might first depend on how profitability is measured. Marcus's

(opp.cit.) proxy for profitability was the proportion of loss-making firms reporting either zero or negative net income to the US Internal Revenue Service. Thus profitability of all firms in the industry is taken into account in this measure and, to the extent that the youngest and newest firms do report to the Internal Revenue, we could expect them to be adequately represented in this measure. Further since what is measured is income minus costs i.e. profitability to the extent that cost structures particularly vary between large and small firms, this does not affect the measure as income being revenue minus costs automatically adjusts for differences in costs between firms.

Hamilton's measure of profitability, on the other hand, is industry net output per head (in effect a measure of value added). This is measured at the industry level end is probably a better estimate of the profitability of large or established firms in the industry whose productivity will largely determine the measure. The low overheads and long hours worked in many new businesses, together with second-hand machinery, make them very different, structurally, from larger and established units. Further, while large firms often do the standardised work with medium to long production runs, new and small firms often tackle difficult, non-standard work and one-offs. Thus output per head as a measure of profitability will be different in small and large firms within an industry. Secondly we have to consider whether the new and young firms will respond in the same way to profitability as middle and old age firms. Oxenfeldt (1943 p.106) dismisses industry profitability as a determinant of entry which might lead us to question the relevance of industry profit-

ability to exit. This is not to deny the importance of profit making to survival but only the applicability of industry profitability to this group of exits. Industry profitability is because of the differences in modes of operation, and costs structures, unlikely to reflect the cost-price margin in new and young firms. Additionally, new and young firms may respond differently to loss-making. Lack of profitability might be expected by the new founder in his first 1-2 years of operation. He will expect the situation to be financially very tight initially and he may not himself take a realistic wage, far less a return for the entrepreneurial services he provides to his firm which in turn leads us to wonder how the new founder calculates profit since his accounting system is likely to be skeletal. The new founder may not go into production for several months after starting up while developing a product, looking for work or getting machinery and premises into working order. In any case since most recent studies on the subject find that a significant number of new founders were made redundant immediately prior to starting up so that the opportunity cost of the founder's services is most likely unemployment benefit. This also reduces the founder's calculation of his costs and influences his calculation of his 'profit' relative to others in the industry. There may also be psychic returns from being in business for oneself which the founder will take into account when assessing his 'profitability' and whether to remain in business. Since the newest firms have very low costs - low overheads, low evaluation of entrepreneurial costs end low expectations of profits within the first 1-2 years, then it is unlikely that the high rate of exit in this initial period found by Marcus can be

accounted for by lack of profitability in these years far less as a measure of profitability as measured for the industry as a whole.

This section has attempted to establish that young and infant firms will not respond to profitability in the same way as older and established firms. However, profitability is a clear, significant, negative determinant of entry which, if total exits are largely comprised of young and infant firms, we would not expect since in this section it is hypothesised they will not respond to profitability. However, Marcus's dependent variable is not industry profitability but the proportion of firms reporting zero or negative net income to the Inland Revenue. Young and infant firms will figure largely among those reporting zero or negative net income so that a higher exit rate from among those reporting negative or zero net income is not necessarily a response to profitability to the extent that the dependent variable is composed of young and infant firms. This reinterpretation of Marcus's finding is particularly important since his statistical results were particularly strong. Oxenfeldt (1943) too suggests that it is the effect of high entry on industry profitability which accounts for the negative relationship of exit end profitability, thus making entry the primary cause of exit. Hamilton's (1982 p.165) finding about the significance of profitability in determining exit is less important since his total equation has over five variables an R^2 of only 0.44.

2.7.2 Growth As A Determinant Of Young And Infant Exit:

Growth should, theoretically, help both young and old firms to survive.

Gudgin (1974) bases his theory of the negative correlation between exit and growth on the premise that inefficient firms might find survival easier in an industry which was expanding then in one which was contracting since in a contracting market competition will be more fierce for a reduced market. The inefficient older firm may survive if work is plentiful and a young firm will be likely to thrive if the market generally is growing. However, in the empirical work on entry it was found that the relationship between entry and growth was more often a negative one. This empirical result in fact removes a logical inconsistency in the theories of exit and entry and provides evidence for the existence of a young and infant exits sub-group. In traditional theory, low growth would result in low entry and high exit. If a substantial proportion of 'exits' are actually young and infant firms, that is recent new entrants, then it is difficult to see how high rate young and infant deaths can occur coterminously with low entry rates. However, if growth is empirically determined to be negatively related to entry then low growth will stimulate high entry and this is consistent with low growth stimulating high exit. This is also consistent with the findings (Chapter 4) about a positive relationship between entry and exit (and where that relationship is theorised to be as a result of the vulnerability of young, small firms, the above results implicitly suggest that total exits are largely made up of young and infant deaths). Again the main relationship may be between exit and entry rather than exit growth.

2.7.3 Entry As A Determinant Of Young And Infant Exit:

It is not always clear what the theory behind the positive relation-

ship between exit and entry implies. If as for Henderson (1979) and Gudgin (1978) entry is a proxy for the age structure of an industry, then this implicitly acknowledges young and infant exits as making up the large part of total exits. The theory revolves around the vulnerability of young firms thus distinguishing the reasons for death among young and infant firms as different from death among old and middle aged firms.

If this variable is a significant determinant of total exit as it is suggested in Chapter 2, then it implies that total exits largely comprise young and infant deaths.

Since it is the argument of this chapter that the poor empirical results on exit occur because in the specification of the determinants of exit the existence of a large group of young and infant exits is overlooked, then where the empirical results are good the corollary is that this is because the particular determinant under examination is focused on the young and infant exits. The significant results achieved by entry as a determinant of exit is evidence that young and infant exits comprise the largest part of total exits. The particular relationship is a positive one between entry and exit and more specifically on the argument of this chapter a positive relationship between entry and young and infant deaths. Since the relationship between entry and exit fairly conclusively exists (see Chapter 2) then entry is one of the determinants of exit which must figure in any theory of new firm formation end infant mortality developed in the thesis.

2.7.4 Capital Cost Of Entry And Young And Infant Deaths:

The hypothesis here is that exit will be lower in those industries with higher capital outlays. If this hypothesis were proved correct it would provide indirect evidence that young and infant exits are a large proportion of total exits. High entry into trades with low capital requirements was noted earlier in the thesis to be true but theoretically trivial. If exits are largely made up of recent new entrants (young and infant deaths) then exit can only be higher in trades where the capital cost of entry is lower, that is in trades which have a higher entry rate. Theoretically this is different from Caves and Porter's reason for postulating a negative relationship between capital cost of entry and exit. Caves and Porter suggested survival would be promoted by the low return commanded by the fixed assets of a company which are specific to it and thus have a low opportunity cost, while all the researcher is suggesting is that the capital cost of entry impedes entry rate and thus reduces the possible exit rate - if young and infant deaths account for a large proportion of total exits. Whatever the theory, however, unfortunately neither Caves and Porter (1976), Marcus (1967) nor Henderson (1979) find a negative relationship between capital cost of entry and exit. Only Hamilton (1982 p.157) finds it a significant explanator of independent exit. Thus there is no clear evidence provided by this variable for the existence of a young and infant exits sub-group.

2.7.5 Proportion Of Small Units In An Industry As A Determinant Of Young And Infant Deaths:

This variable as a determinant of exit shares a great deal theoretic-

ally with entry as a determinant of exit. In the studies of Gudgin (1978) and Henderson (1979) entry is a proxy for the young firms in an industry and the set of young firms substantially overlaps with the set of small firms. Nearly all young, independent (manufacturing) firms are small. Thus this variable implicitly recognises young and infant exits as an important part of all exits, and if young and infant exits are a large proportion of total exits then this variable should be a significant explanator of exit. This is not conclusively the case. Marcus's statistical results which were particularly good find asset size to be a significant explanator of exit but neither Gudgin, Henderson nor Hamilton were able to replicate this result. However, this variable would not be expected to perform as well as entry .

'Proportion of small units in an industry' includes old and well-established but small firms as well as nearly all the new independent entrants while entry measures young and infant firms exclusively. The superior empirical performance of determinants of exit which map more closely onto age is evidence for the existence among exits of a large proportion of young and infant exits.

2.7.6 Productivity As A Determinant Of Young And Infant Deaths:
The empirical evidence on this variable as a determinant of exit is inconclusive. This would be expected if a substantial proportion of all exits were actually young and infant deaths. It is unlikely that a single measure of productivity could reflect the conditions in both the large and small firms. The technology and equipment used in large firms producing standardised products is very different

from the small firm who produces small batches or 'one-offs' of the same product for a specialist market. Moreover the measures used by Hamilton (1982) and Caves and Porter (1976) will reflect productivity in the larger, old established firms which it is hypothesised form only a small proportion of total exits.

2.8 Conclusion:

The aim of this chapter was to examine theoretically and empirically the determinants of exit. The traditional determinants, industry profitability and growth and productivity emerged as empirically indifferent explanators. The 'proportion of small firms in the industry' and entry were more successful, which in the literature has been interpreted as suggesting the vulnerability of young firms. In turn this supported the researchers view that young and infant deaths formed a substantial proportion of all exits. The traditional determinants of exit were found to be less applicable to young and infant deaths and thus it was suggested explained their indifferent performance. But entry and to a lesser extent the proportion of small firms in an industry, implicitly identify exits as being young or infant. The empirically determined positive relationship between entry and exit is thus an important one which has to be explained not only in theories of exit but also in theories of entry as what is being suggested is a higher death rate among recent new entrants (i.e. young and infant firms). The determinants of entry should at least suggest why there is a substantial probability of failure while the firm is in its economic infancy[2].

However, although clearly a significant determinant of exit, the single best determinant, the postulated source of the significance of another determinant(see Chapter 2 on the source of the significance of growth as a determinant of exit) and possibly also the source of at least part of the significance of profitability (see Chapter 2 on Marcus and Oxenfeldt) even entry leaves a substantial amount of exit unexplained. Gudgin finds that 'entry rate' explains only about 25% of the inter-industry variation in exit rates.The existence of old and middle age exits which entry does not explain theoretically partially accounts for the exit unexplained by entry. But the researcher will later suggest that although there is a general tendency for the exit rate to rise with the entry rate, the process is fundamentally unpredictable and no precise relationship between entry and exit can be specified.

Notes:

1. This study found that 38% of all entrants failed within three years of starting up, 25% within 12 months and a further 7% within 24 months.

2. Marcus (1967) defines economic childhood as up to 5 years old firm. Since exit among new entrants is greatest within the first 24 months, the researcher calls this economic infancy.

APPENDIX 3

THE MICRO-DATA SET

Appendices 1 and 2 are a detailed discussion of theories of entry and exit and their empirical testing.It is suggested that empirical results have been poor at least partly because the theories did not adequately describe their population. Theories of entry seem to describe opportunistic rather than craftsmen type entrepreneurs and theories of exit, as currently specified, probably account for middle and old age deaths rather than infant deaths.

For the purposes of testing the theory outlined in Chapters 1 to 3 a new micro data set was established from which sampling for questionnaire purposes was to take place. It is suggested in the latter part of the appendix that this micro data set is substantially complete within the limits defined and thus provides a sound basis for the sampling outlined in appendix 4.

Several of the major research projects using micro-data sets have been done using Dun & Bradstreet's commercially published data source. Economical in terms of both time and money unfortunately no comparable resource exists in the U.K. Major recourse in the U.K. has been to official sources such as employment records (ER 1) and Factory Inspectorate data. The employment records have been replaced by the Annual Census of Employment which is covered by the Statistics of Trade Act and hence has restricted access while the Factory Inspectorate has been reorganised into the Health and Safety Executive and, with computerisation of records, access has generally been withdrawn.

However, the three classic problems of official data described by Lloyd and Mason (1976) as inaccuracy, lack of continuity and restricted availability to the academic researcher have led many researchers to 'custom-build' their own micro-data bases. The researcher required a data source which was comprehensive in its coverage of the very newest manufacturing establishments. Commercial directories are usually particularly lacking at this end of the continuum. Either the newest businesses have not been detected or, if they have been approached, have declined paying for an entry. Kelly's regional directories suffered from this inadequacy but are in any case no longer published.

Official sources offer varying degrees of coverage. The Register of Openings and Closures kept by the Department of Trade and Industry excludes firms employing less than 20 people in the West Midlands, 50 in the South East or 11 elsewhere. Since the researcher found only one firm in the sample survey employing more than 10 and Hamilton (1982 p.84) found 61% of his new business population employed 10 or less, the Openings and Closures Register is obviously very inadequate from the researcher's point of view. The Register of Companies would exclude unincorporated businesses which is likely to be an important status among the very newest firms. The Register of Business Names would include unincorporated businesses whose name was other than that of the founder or founders but since registration is no longer compulsory the register is not even complete on the above criteria. Facto$ Inspectorate records, a previously widely used micro-data source, is

no longer available. While possibly the best official source, the Factory Inspectorate inspects on at least a 4 year cycle (2 years when Beesley used the source in 1955) so the potential time lags in the recording of new businesses is substantial. This affects the completeness of these records at the very new end since not all firms founded will survive for long enough to be recorded. A corollary of this is that there will also be a delay in recording deaths. Unless these lags balance out the life-span of 'infant deaths' may be overstated or understated. This defect would particularly affect the present research since an aim is to enumerate 'infant deaths' as a group separate from all exits.

3.2 An Alternative Data Source:

The inadequacy of the available sources either through compilation or aggregation, led the researcher to consider less conventional sources. The Yellow Pages of the telephone directory seemed to offer the potentially most complete source of new firms. In addition to being completely accessible, the researcher would have no limitations imposed by the confidentiality of official sources. Since the researcher wanted to approach a sample of the population identified this aspect was particularly important. Further past editions of the directories represent historical 'snap-shots' so that new entrants in passed periods can be identified if the appropriate directories can be obtained.

In terms of compilation the Yellow Pages was deemed by the researcher also to present a low level of bias. The inherent bias is that it [Bcords only new firms renting a phone on a business line. The view taken by the researcher is that it is difficult to imagine firms in the engineering and metal manufacturing trades operating without a phone and it seems equally unlikely that their domestic number would prove adequate in running the business. If they are not to lose business they must be readily accessible which is best assured by having a phone on the business premises. The cost is not excessive and the benefits are considerable.

3.2.1 Yellow Pages:

Telephone directories have been used in the past as a useful source of establishment data but often as a secondary checking device rather than a primary source. This study aims to use telephone directories as a primary source as it is thought that the particular focus of the research minimises the importance of the usual objections to use of telephone directories.

The objections have been put forward most often by those trying to construct industrial databanks for particular areas (Aitken and Wilson 1981, Lloyd and Mason 1976, Gudgin 1974, Firn 1976). There is usually no specific research use in mind for these databanks and it is important that they are as comprehensive as possible so that they can furnish the requirements of particular research projects. It is this comprehensiveness which is

onerous and leads to criticism of Yellow Pages as a primary source. But for a particular piece of research the telephone directories can be made efficient and can overcome many of the objections usually put forward.

Aitken and Wilson suggested some of the main problems of this source:

1. A name is required to begin the search - very few people would 'read' a directory from cover to cover in search of relevant entries.

Reading the telephone directory in search of relevant entries may be unusual but it is not invalid. Reading the White Pages i.e. the comprehensive telephone number listing may be more time consuming than reading the Yellow Pages i.e. the listing of those subscribing at the business rate. The Yellow Pages is classified by trade and the 'reading' can then be limited to those classifications relevant to the particular study.

2. Small firms may trade under an individual's name making identification of industrial from other users impossible without other base data to work from.

This objection can only apply to a reading of the White Pages. Yellow Pages contain all those renting lines at the business rate regardless of whether the firm trades under a company name or the name of an individual. Although British Telecom do not guarantee the pages free from errors or omissions there is no reason to suppose these to be significant. The Yellow Pages will not, however isolate those carrying on a business using a domestic line but this is not a criticism which can only be applied to the telephone directory as a source. Since such businesses carried on in back bedrooms and garden sheds are likely to be, if not part of the black economy at least part of the grey, they will not be documented by any agency, government or otherwise. It is thought that many small, new firms have such beginnings and it would be interesting to discover them at this stage, but since this is practically impossible questioning established new firms about their beginnings may shed some light on this stage of the process. From the researcher's point of view, however, the most important stage in the formation process is when the new firm emerges into the local economy and chooses a separate location for the conducting of the business. New premises are likely to precipitate the renting of a telephone line - it is difficult in this day and age to imagine any business being conducted without access to a telephone. It could still be possible, however, that these new business new subscribers wouldn't be identified by using Yellow Pages if they rented a line at the domestic rate. The difference between the domestic rental and the business rate rental is $7.50, the business rate being the higher. However, there are incentives to rent a business line if a business is being conducted:

(a) Directory entries in Yellow Pages plus additional identification in White Pages e.g. Capewell Ltd., Agric. Structl. Engs.

(b) Option to advertise in Yellow Pages or have entry picked out in bold type in White Pages (both at additional cost).

(c) Quicker repairs.

(d) Calls dealt with by 'heavier duty' part of the exchange to cope with more frequent calling.

In addition the Post Office have to install the phone which affords an opportunity for assessing the use of the premises. They would also be suspicious of domestic lines rented to business addresses e.g. Unit 9, Pensnett Trading Est and they would "be very upset" to find someone conducting their business on a domestic line. Thus to a certain extent the researcher can rely on the vigilance of British Telecom for the comprehensiveness of Yellow Pages.

3. Not all establishments have telephones, or more commonly multi-plant firms have their own switchboards in their main plant and so not all their plants will appear in the telephone directory.

The possibility of businesses not having phones or using domestic lines for the business has already been covered. Businesses without telephones must be relatively few and businesses conducted from home using the domestic number, however interesting, cannot be traced as they are not fully fledged businesses. The other part of this problem, multi-plant firms having their own switch-boards, while important in the construction of a databank, is not relevant to this particular study as it is new, independent firms which are to be traced and not new branch plants.

The final problem as Aitken and Wilson see it is:

4. Telephone directories are out-of-date before they are published due to the time required to amend, up-date and publish.

This is not a serious problem in the context of the present research. The aim is to trace for the time period selected, as many as possible of the new firms set up within that period. The period itself is not uniquely defined. What is important is that the firms should be as new as possible. A three year period is envisaged with the result that the oldest firm in the population would be between 3 and 4 years old. It would not then matter that the April 1981 edition of Yellow Pages contained firms set up during 1980. Since the degree of out-of-dateness is not expected to vary between consecutive editions, in using the 1980 to 1983 directories a 3 year period will have been covered even if it is actually 1979 to 1982. It is intended to ask the founders of the new firms identified how long they have been in business which will serve to identify the time period covered by the directories used.

3.2.2 Extracting The New Independent Firm Population:

Since interest was to be confined to the Metal Industries, Yellow Pages were used as the classifications minimised the necessary 'reading' of the

directories. As each entry is made under the available classification of the subscribers choice, the classification likely reflects the firm's most important, though not only, line of business.

278 categories were examined as being relevant to a study of West Midlands Metal Industries. New entries were isolated by a pairwise comparison of two consecutive issues of Yellow Pages. For the purposes of Yellow Pages, the West Midlands is divided into four areas N.W., N.E., S.W. and S.E. and a separate directory published for each area. The entries for a fifth area, Birmingham City Centre, appear in all four editions of the directory which involves a certain amount of cross-checking to make sure new entries are not double counted.

This first part of the exercise isolated between 150-200 apparent new entries per pairwise comparison. Each of these apparent new entries was then further checked to make sure it didn't appear in an earlier (1980) edition of the comprehensive White Pages. This was necessary to eliminate several possibilities:

1. That the apparent new entry was only a change of classification in the Yellow Pages.
2. That an apparent new entry was not a firm which had moved from one Yellow Pages directory area to another.
3. That an apparent new entry was not a firm located in one Yellow Pages directory area which had decided to pay for an additional entry/advert in the directory of another area.
4. That an apparent new entry was not an omission from Yellow Pages in one particular year, making it look like a new entry in conducting the pairwise comparison.

1. Change of Classification in Yellow Pages:

Because the pairwise comparison was conducted within certain categories, entries which had changed classification looked like new entries. However, as long as the name remained the same such entries would appear in the 'bumper' (residential plus business) 1980 edition of the telephone directory. In actual fact because the area covered by the four editions of yellow pages is not covered by one single 'bumper' directory, three separate 'bumper' directories were needed for cross-checking, viz the Birmingham Area, Southern Area and Northern Area directories for the area. This increased the work considerably as it was found it advisable to check in two directories for firms names in areas marginal between two directory areas.

But apart from increasing the workload, change of classification was not a big problem and in fact accounted for only an insignificant proportion of the new entries which turned out not to be new firms.

2. New Entries Arising From A Change In Location Of The Firm Resulting In Them Appearing For The First Time In One Of The Other Three Yellow Pages For Birmingham And District: This eventuality occurred occasionally and the new entries so arising were eliminated. However, a more frequent occurrence was where the relocation of the firm resulted in

inclusion in the Yellow Pages where it had previously been omitted i.e. in a few cases the firms had relocated but had not changed Yellow Pages area but the fact of their moving and changing phone number seems to have brought the previous omission to attention.

3. Additional Entry/Advert In The Yellow Pages Of Another Area: New entries accounted for by the above could usually be spotted by their address and only in the case of firms in areas marginal between the two areas was it necessary to check them out in the 1980 directories.

4. Apparent Entry Being An Omission From A Previous Year: This was probably the most common occurrence and was partly dealt with under 2. In using the telephone directories omissions are of course a fairly important issue and so will be dealt with in more detail below.

3.2.3 Omissions:
How Do Omissions Affect The Accuracy Of The Methodology In Isolating New Firms From Yellow Pages?
Omissions of firms from the base year causing them to look like new entries in the consecutive year accounted for 7% (approx.) of the entries marked as new in the Yellow Pages. This did not directly affect accuracy as it simply meant that there were a considerable number of new entries which turned out not to be new firms. Omissions from the base year meant only an increase in the workload. Similarly an omission from a consecutive edition would look like the death of a firm (just as inclusion in the following edition looks like a birth).

However, real deaths of new firms (which the study aims to enumerate) would also be indicated by a number unobtainable and an accidental omission would still be contactable by phone. Therefore, omissions do not affect the accuracy of the data base. However, the general likelihood of omissions obviously affects the accuracy of the procedure to isolate new firms. If many new subscribers are omitted from the first edition of Yellow Pages in which they should be included and if a proportion of new subscribers are new firms then the methodology will fail to pick up such firms. So it is important for accuracy that omissions are as infrequent as possible.

There seems to be no way of checking to what extent new subscribers are accidentally omitted. However, old established firms will often be included when they move location and they are thus brought to the notice of the Telecommunications Authorities. The critical event of moving brings them to the attention of the authorities and in the same way it is less likely that new subscribers will be omitted accidentally. But without knowing in detail how the compilation of the telephone directories is done it is impossible to say more.

During the period of the research the production of the Yellow Pages passed from International Thomson organisation to ITT World Directories. It seemed to the researcher that this resulted in increased accuracy of the directories discernible in the 1982-83 comparison when there seemed to be a decrease in 'new entries' which turned out to be omissions from a previous edition.

3.2.4 Telephone Checking:

Having carried out as much cross-checking of the new entries in Yellow Pages as was possible using other base year directories, the second task was to further check that the new entries could be described as new firms.

The researcher had extracted the information on the 2000 (approx.) new entries to Yellow Pages which remained after the first check using other directories. The name, address, phone number and Yellow Page's classification of each firm was entered onto an index card and then each of these firms was contacted to ask:

1. If they were a new and independent firm, started since 1979 and not being a branch or subsidiary or having changed name.
2. If they are new, how long has the firm been established.
3. Is their classification in the Yellow Pages an accurate indication of their operations.

The replies indicated a four-way grouping:

1. New independent firms.
2. New dependent firms.
3. Not new firms.
4. Numbers unobtainable.

New Independent Firms:

900 of the firms contacted turned out to be new independents as defined by the researcher.

New Dependent Firms:

Approximately another 150 firms were excluded from further analysis because they described themselves as branches or subsidiaries of other firms. Since the researcher had excluded before the phone checking stage a number of apparently 'new entries' of well known names this group of dependent firms was incomplete.

Not New Firms:

About 200 of the firms contacted turned out to be not new firms either dependent or independent. They appeared as new entries generally because they had been omitted in some previous year which had been recently rectified. A smaller number had changed their name and were eliminated as they would be included under the firms name if they had formed the firm post 1979.

Numbers Unobtainable:

The new entries turned up about 350 firms for which the number was unobtainable. Proportionate to the number of firms identified as new independents this seemed too large a number to ignore. The most likely explanation is that they are new independent firms who died in their infancy. To ensure this was in fact the case these entries were checked through subsequent 'bumper' editions of the directories to make sure the firm had not simply changed location. The only other explanation for the

numbers unobtainable is that a firm both changed its location and its name. Among the New Entries a number of firms mentioned that they had now changed their name and this new name emerged subsequently as a new entry and was eliminated. However, to be untraceable the 'numbers unobtainable' would have to have changed both name and location simultaneously. The number at the old address would be unobtainable although the firm was 'alive' at another location. In asking firms contacted whether they were new or whether they had simply changed name it should have been possible to identify firms which had changed name and moved location. In practice this arose only once.While either moving and changing name happen occasionally,it seems that both together happened infrequently. The only possibility where a number unobtainable would be wrongly identified as an infant death is where a new firm still alive had moved out of the survey area. However, previous studies (Whitelegg 1976) have indicated that it is unusual for new firms to move so far in their earliest years. Having checked as far as possible that the numbers unobtainable were not alive in any recognisable form, they were included in the analysis as non-surviving independent entrants. Their number was too large to ignore and if omitted they would at least seriously understate the numbers of entrants.

3.3 Survivors and Failures:
The data base as described above provided a basis for dividing the population of new firms into survivors and non-survivors. The numbers unobtainable having been thoroughly checked were to be deemed indepen- dent entrants who did not survive to the end of the survey period (January 1984). However, in the year since being contacted some of the 'live' new independent firms could be expected to have failed. Therefore, all of this group (1231 firms) were checked for continuing survival in the 1984 editions of Yellow Pages, the Northern and Southern Area directories and the Birmingham Business edition. The cross- checking in various directories was necessary to detect firms which hadn't died but moved. To reduce cost only those who appeared to have died were then checked directly by telephoning the number in case their apparent 'death' was simply an accidental omission.

3.4 The Data:

3.4.1 Industrial Classification:

When contacting the firms by telephone the opportunity was taken to enquire if their classification in Yellow Pages was accurate. All firms found to be new entrants, plus the numbers unobtainable, were given their standard industrial classification, both the 1968 and the revised 1980, although in order to compare with previous work the 1968 classification will be most used.

Despite confining attention to the manufacturing categories of the Yellow Pages, it was found during the telephone checking that a number of firms were not in fact manufacturing but only supplying. This was not due to error but through the desire in some industries to be described as manufacturers (see Dicken and Lloyd) even though, in fact, the firm was only supplying. This accounts for much of the entry in SIC 8 which will be excluded from the analysis for many purposes. A few entries classified to construction, shop fitting, were also 'weeded out' since there would not be a complete

enumeration of these classes. A deliberate inclusion of steel stockholders was decided upon, although in many if not most cases their function is merchanting rather than manufacturing. However, many steel stock- holders modify the steel which they resell and could be classified as manufacturers. It also seemed too central to the metal and engineering trades to be excluded and it was considered that being basically buying and selling, essentially a service industry whose sole trading was with the metal using manufacturers, it might provide interesting comparisons with the manufacturing trades in terms of rates of entry and 'infant exit'.

3.4.2 Age:
When contacted by telephone all firms were asked when they formed the firm. It is impossible to say exactly how accurate were the answers but considering that none of the firms was more than 4.5 years old and the majority were very much younger, it is reasonable to suppose they were accurate to within a few months. For the numbers unobtainable it was of course impossible to have such accurate information. As has been described the numbers unobtainable were traced through each edition of the telephone directories subsequent to that in which the entry had first appeared. As a best estimate a firm was deemed to have failed half way through the year of the directory previous to the first of the subsequent directories in which it did not appear. The lags inherent in the preparation, correction and publishing of the directories make this procedure less than perfect. Every effort was made to increase accuracy, however, by taking advantage of the slight staggering of the publishing dates of different types of telephone directory. 'Birmingham Business' was published in February while the 'bumper' editions for the Northern and Southern tend to be published in July or August. The Yellow Pages were generally available in April of each year. Checking entries through the various directories it was possible to increase the accuracy of the estimate of age. The lags detected in contacting the 'live' new firms suggest however that lags in removing 'dead' firms from the directories will be compensated for by the lags in gaining entry into the telephone directory. Thus the age of the firm at death is likely to be accurate although the actual dates of formation and closure would not be as reliable. The researcher has accepted this inadequacy of the telephone directories. Indeed, this problem is not unique to the telephone directories but was experienced to greater defect by Hamilton (1982) working with the Factory Inspectorate data which promises up-dating only at least every four years (when Beesley (1955) used the source, the up-date period was two years). Hamilton covered a four year period but accepted that this period was not uniquely defined.

3.4.3 Location:
The locations of all the firms in the data base, dead and alive, were recorded by postcode at the area level but not street level. Addition- ally all firms locations were recorded by their grid reference from the Birmingham and West Midlands A-Z street atlas. However 132 were not recorded because they lay otwith the scope of the A-Z. Nearly all of the excluded firms were located in Redditch. Using postcodes had the disadvantage that the area covered differs between codes. Centre city code areas are very much smaller than those in outlying areas. This makes comparison difficult as does the irregularity of their shape. The A-Z grid reference provides location information at a highly disaggregated level for

areas of approximately one quarter square mile. These units can then be aggregated as necessary and comparability in terms of size maintained.

For other purposes of comparison only the highest level ostcoded area is necessary i.e. Wolverhampton, Walsall etc. as in Beesley's study. It is possible to enumerate for these broad areas the total of manufacturing units in the area. No such data exists for the disaggregated grid reference areas. So while we can compute rates of entry for the larger areas, this is not possible for the disaggregated data.Thus while the disaggregated data existed ,for most purposes the 2 digit postcode classification was used and adapted as necessary

3.5 The Main Entrepreneurial Events:A Preliminary Survey of the Population Data:

This section provides a brief breakdown and analysis of the population data on entry, collected as described in earlier in the chapter. It is not the intention of the study to use the data to carry out a detailed inter-area or inter-trade analysis of the determinants of entry. It has been argued in Chapter 1 that this type of approach has not been markedly successful (Hamilton 1982, Gudgin 1974). The more limited aim of this section is in terms of the very basic data collected on the total population, to indicate what is happening to independent entry at the population level.Although the testing of the argument of the thesis is accomplished at the micro-level, the theory of entrepreneurship followed describes the operation of the economic system and it is the events at the population level which will describe the main processes of entrepreneurial activity. It represents standing back from the trees in order to see the wood.

3.5.1 Industrial Classification :

Appendix 9 provides a breakdown of the new independent entrants identified by Minimum List Heading and by five figure Standard Industrial Classification. The main entrepreneurial event to notice here is that although independent entry is possible, since it occurred, into 85 of the trades on which data was collected (this includes the non-manufacturing trades in the population) 41% of total entry was accounted for by only three of the five figure level Standard Industrial Classifications and 78% of total entry was into only 15 of the five figure level Standard Industrial Classifications. Without carrying out a rigourous regression analysis it seems fair to suggest that those trades into which entry was highest are not trades where the capital costs of entry are particularly low. The point has already been made (see Appendix 1) that new independent entry will in any case only occur where capital costs are relatively low. The trades with the most entrants could not be identified as having particularly low capital requirements.

Entry is very high into SIC 390.New Independent Entrants numbered 257. However while absolute entry is high the entry rate is only 16%. Toolmaking of all kinds is highly localised in the West Midlands so that a large number of entrants could be expected where the theory of entrepreneurship suggests that entrepreneurial activity is usually trade and area specific. The entry rate puts the large number into perspective.

Miscellaneous metal goods SIC 39912 also has a high absolute number of entrants (149) as does metal finishing SIC 39911 (67) but in contrast to SIC 390 this also reflects a fairly high entry rate, 37.8% for MLH 399 as a whole. The absolute number of entrants into MLH 399 is 296. Hamilton (1982) finds residual classifications such as this to be very 'turbulent' (i.e. characterised by high entry and high exit) and suggests that this is not unexpected in these residual classifications:

> "intended to capture those businesses whose products are such as to defy classification into any more narrowly defined MLH industry. By definition .... the products in question must be either novel or unconventional".
>
> Hamilton 1982 p.131.

However, although the researcher found MLH 399 to have a high number and rate of entry this was not true of the other 'residual' category, SIC 349,in the study which had a relatively low number of entrants (9) and a low entry rate (5.6%). Hamilton's explanation is on two further counts:

1. The 'infant exit' rate, 42% of all entrants, is very close to the average of 38.9%. This study cannot calculate total exit but Hamilton's explanation of high turbulence in the residual categories suggests they are areas of experimentation. Thus'infant exits' as failed experiments will be particularly numerous among total exits in those categories. High turbulence would require a high 'infant exit' rate as well as a high entry rate which is not found in this study.

2. The 'Yellow Pages' classifications which comprise MLH 390 allow it to be seen in more detail the nature of the work done in this 'residual' category. Partly the large number of entrants is due to the number of trades embraced by this classification. It comprises 59 of the Yellow Pages classifications, most of which are not experimental but are clearly identified. 67 of the 296 entrants into this 'residual' category are accounted for by one of 14 standard metal finishing processes (399.11) while metal fabrication of various kinds, metal spinning and pressing and welding, account for a large proportion of the remainder. These trades reflect not experimentation but generality. They will, within their skills, do almost any work they are offered. They are either sub-contracting or performing a single process on metal used in a wide range of products. It is these factors which make them residual. The rest of entry into SIC 390 covers clearly identified and not experimental categories such as locks and springs, castors and glides and pins and needles.

While the theory of entrepreneurship in the thesis would accept higher entry into trades localised in the area since the prevelance of certain trades and the employment in them makes it inevitable that, if individuals are alert, opportunities will be discovered in those trades. Entry rates, however, taking into account the population of firms in the area, will adjust for this. There is in fact great variation in entry rates and no discernible tendency for rates of entry to rise with numbers of entrants. High numbers

of entrants gives rise in some cases to high entry rates for example SIC 399 (37.8%) and in some cases to much lower rates of entry for example SIC 390 (16.3%). The same is true of low numbers of entrants. The traditional determinants of entry have been cast doubt upon. An alternative theory would have to account for the wide variation in entry rates s well as the variations in absolute numbers.

3.5.2 Survivors And Non-Survivors By SIC:
As previously described the telephone directory data base gave rise to two groups of entrants, survivors and non-survivors.Appendix 9 shows the population as survivors and failures, 60% and 40% respectively, detailed at the 3 figure (MLH) industrial classification level. However, in order to compare rates of survival and non-survival within industrial classifications it was necessary to exclude SIC's into which numbers of entrants were so small that the percentage of entrants surviving and not surviving was either very high or very low e.g. 100% or zero. Excluding the categories with absolute numbers of entrants less than 10 (the significance of these is considered in more detail in Chapter 5) leaving 19 SIC categories covering 92% of the new independent entrants discovered in the study.

Table 3.1 lists this sub-group, the numbers of entrants into each MLH and the percentages of these which survived and failed. The percentages did not seem to vary significantly from the population means of 40% for failures and 60% for survivors. To check this a Chi- square test was computed which showed that this was in fact the case. The individual trade percentages for survivors and non-survivors were close to the average percentages for the population, the Chi-square being insignificant at the 5% level. Although with four exceptions the MLH categories were all from division 3, they comprise 15 MLH's covering trades as diverse as jewellrey, fabricated steelwork, printed circuits end nuts and bolts. A rigorous analysis of the effects of growth, profitability et.al. was ruled out as requiring a separate thesis (see Hamilton 1982 and Gudgin 1974),but there does not seem any obvious reason why the survival/non-survival percentages in different trades should vary only insignificantly from the 40:60 ratio. Except for two categories (printed circuits and pressure gauges and industrial instruments covering only 42 firms) the percentage of survivors always exceeds the failures over the four year period. A general interpretation of the survival/failure proportions among all entrants, consistent with the theory developed in the thesis is suggested in Chapter 2 .

3.5.3 Survivors and Non-Survivors at the Sub-Regional Level
Chapter 5 ,page 142, shows for each major postcode area, the breakdown , between survivors and non-survivors, of the total of new independent entrants into each area . Except for the City Centre, where the percentage of non-survivors is slightly higher, the proportions of survivors and non-survivors is remarkably constant across the sub-regional areas ,varying only insignificantly from the mean of 40% for non-survivors and 60% for survivors.There is no obvious economic theoretical explanation for this constancy across the areas since the sub-regions of the West Midlands differ quite distinctly in industrial structure and composition (see,for example, Beesley 1955 Wood 1966). As was suggested in the previous section, where a similar result was obtained with respect to industrial classification, any theory of independent entry would have to explain or at

FAILURES AND SURVIVORS BY MINIMUM LIST HEADING

SIC1	FAILURES	SURVIVORS	ROW TOTAL
313.	5	12	17
	29.4	70.6	1.3
323	8	15	23
	19.1	80.9	1.8
332.	4	8	12
	33.3	66.7	0.9
333.	4	13	17
	23.5	76.5	1.3
337.	13	30	43
	30.2	69.8	3.3
339.	16	17	33
	48.5	51.5	2.5
341.	31	55	86
	36.0	64.0	6.5
354.	9	8	17
	52.9	47.1	1.3
361.	5	8	13
	38.5	61.5	1.0
364.	15	10	25
	60.0	40.0	1.9
381.	18	21	39
	46.2	53.8	3.0
390.	98	159	257
	38.1	61.9	19.5
391.	4	6	10
	40.0	60.0	0.8
393.	10	22	32
	31.3	68.8	2.4
396.	35	41	76
	46.1	53.9	5.8
399.	126	170	296
	42.6	57.4	22.4

SIC	FAILURES	SURVIVORS	
832.	72	120	192
	37.7	62.8	14.4
879.	10	22	32
	31.3	68.8	2.4
894.	5	5	10
	50.0	50.0	0.8
COLUMN	526	795	1321
TOTAL	39.8	60.2	100.0

least be consistent with this result. This would appear to exclude postulated determinants ,such as industrial structure, which vary across the sub-regions.

3.5.4 Formation Dates of the New Independent Firms

Table 3.2 details the formation dates (estimates in the cases of numbers unobtainable) of the population of new independent entrants uncovered by the 'Yellow Pages' approach.

Figure 3.1 presents the same information graphically and shows clearly the increase over this short period in the number of new independent firm formations.A theory of new independent entry would have to account for this increase through variables or determinants which could also be seen to be varying over the same time period.

TABLE 3.2

Formation Dates of New Independent Firms

Approx.Period of Entry	Failures	Survivors	Total Nos. of Entrants
1979-80		54	54
1980-81	174	176	350
1981-82	210	290	500
1982-83	139	278	417
Totals	523	798	1321

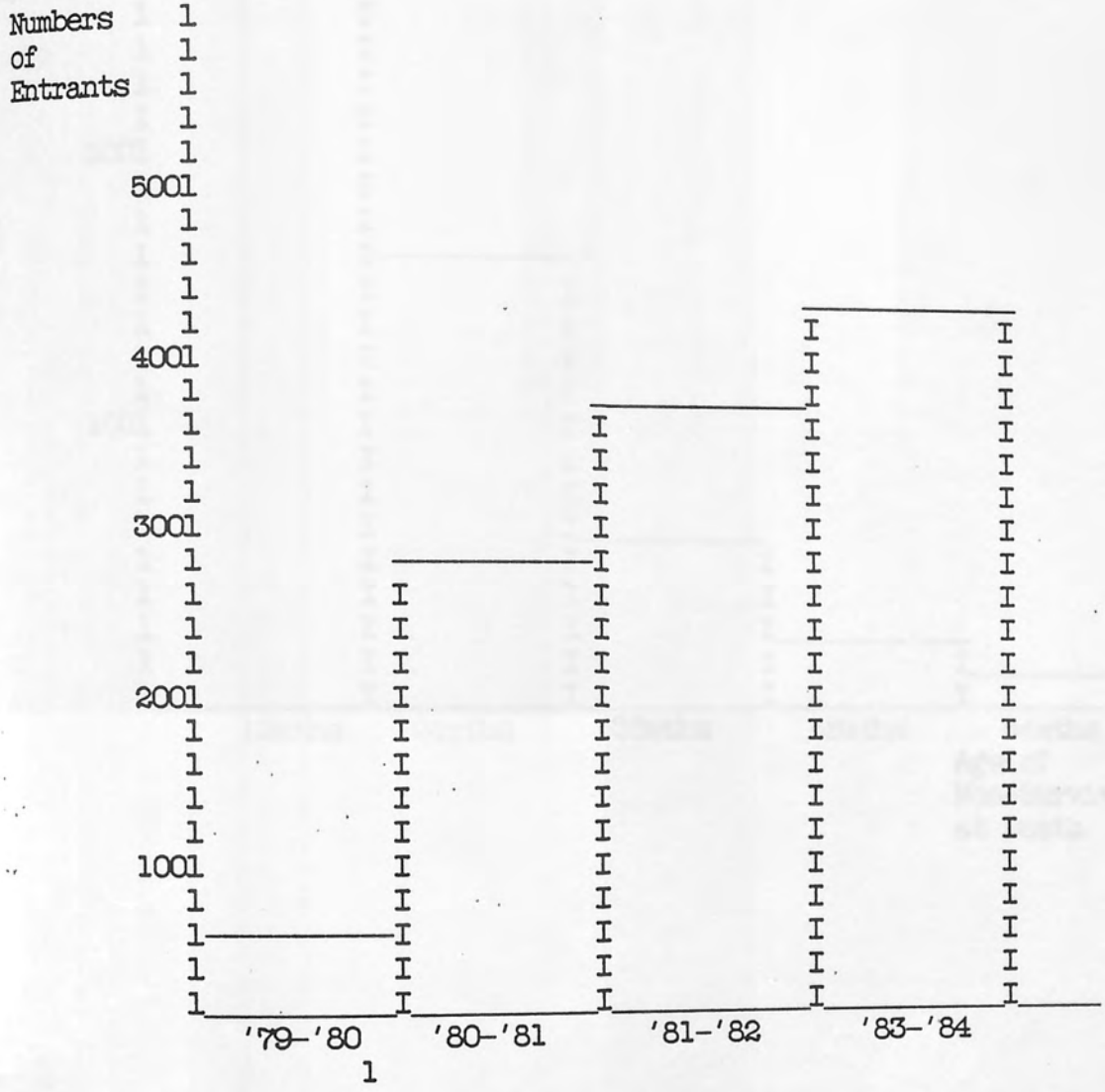
3.5.5 Age and Failure

Figure 3.2 is a separate representation of the age structure among failures. This is interesting because it shows clearly an age profile of failure. The number of failures is highest within the first twelve months of life and decreases thereafter. Over 50% of failures detected over the 4 year period occur within the first year of establishment. Appendix 2 questioned whether this could be the result of the same factors which affect all exits or whether 'infant mortality' is a special case of exit affected by different factors. The conclusion there was that infant mortality was indeed different and could not be explained by theoretically or empirically by the 'traditional' determinants of exit. Figure 3.2 shows just how young are these infant deaths.Figure 3.3 shows that the extreme 'youthfulness' of the infant deaths is a consistent phenomenon over the individual years of the study.

The 'entrepreneurial events' - the large and annually increasing numbers of independent entrants,the relatively high proportion of non-survivors,and the constancy of the proportions of survivors and non-survivors across sub-regional areas and industrial classification completely dominated the search for an appropriate theory of entrepreneurship and it has been attempted to present these initial findings as they appeared to the researcher at that time and without recasting them with the benefit of hindsight.

FIGURE 3.1

Year of Formation of New Independent Entrants



1. 1979–80 is incomplete .It numbers the new independent entrants arising from the 1980–81 pairwise comparison who gave their date of formation as being between July 1979 and June 1980. Clearly many of the entrants in this period would be elicited by the 1979–1980 pairwise comparison which was not carried out.

FIGURE 3.2

Non-Survivors : Age Profile of Death

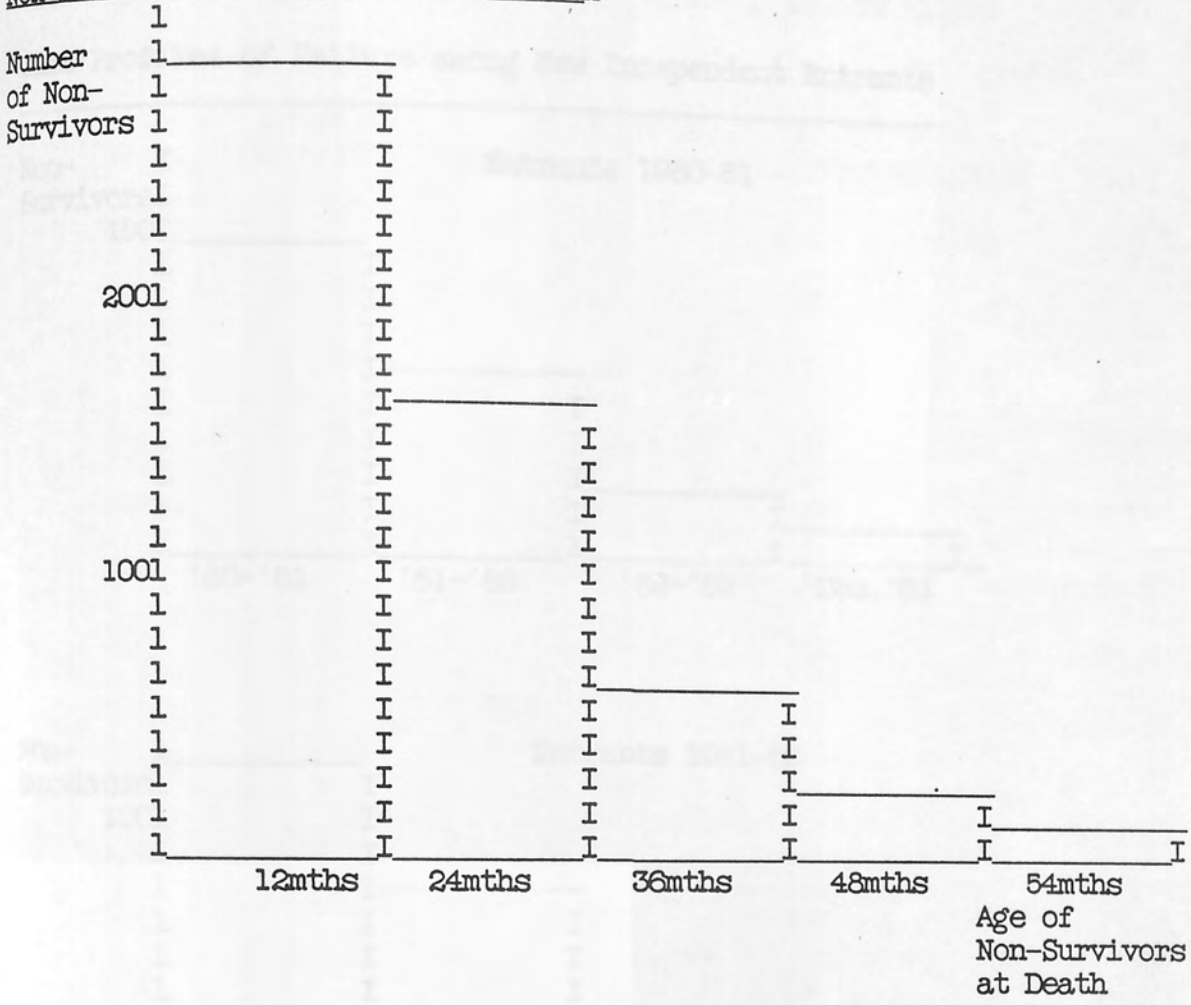
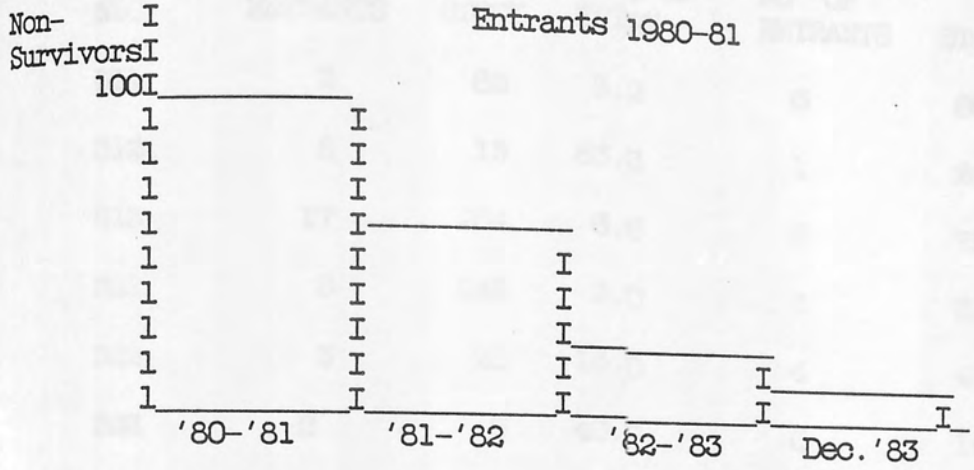
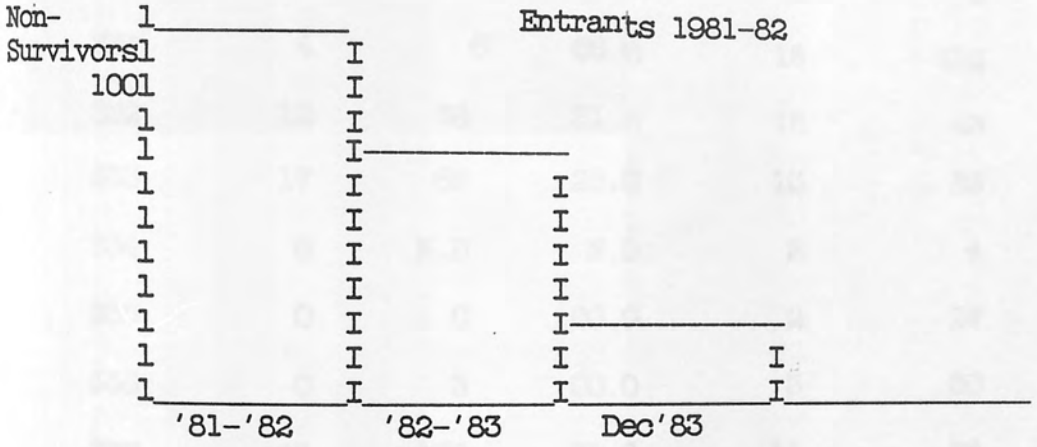


FIGURE 3.3

Time Profiles of Failure among New Independent Entrants





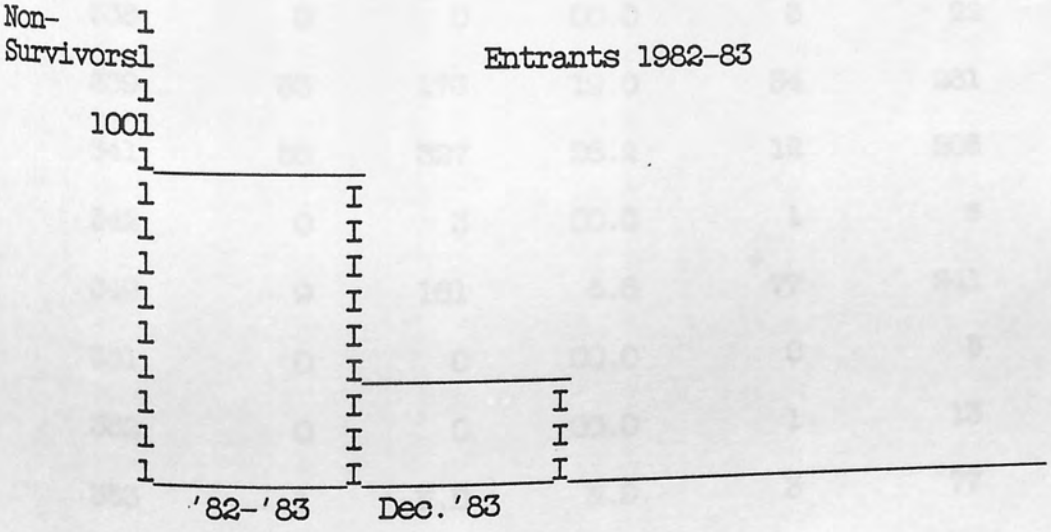


Table 3.3

Comparison of Present Study's Data Base with Hamilton (1982)

	SHARP			HAMILTON		
SIC	NO.OF ENTRANTS	STOCK[2]	RATE OF ENTRY	NO. OF ENTRANTS	STOCK	RATE OF ENTRY
311	2	62	3.2	6	65	9.2
312	8	15	53.3	1	28	3.6
313	17	254	6.6	3	78	3.9
321	5	245	2.0	3	30	10.0
322	3	20	15.0	4	46	8.7
323	2	5	40.0	6	14	42.6
325	2	N.D.	N.D	0	0	00.0
328	1	N.D.	N.D.	0	0	00.0
331	4	6	66.6	15	122	12.3
332	12	38	31.5	13	46	28.3
333	17	68	25.0	13	53	24.5
334	6	N.D.	N.D.	2	4	50.0
335	0	0	00.0	2	27	7.4
336	0	3	00.0	3	30	10.0
337	43	136	31.6	11	78	14.1
338	0	0	00.0	3	22	13.6
339	33	173	19.0	34	281	12.1
341	86	327	26.2	12	205	5.9
342	0	3	00.0	1	8	12.5
349	9	161	5.6	77	241	32.1
351	0	0	00.0	0	5	N.D
352	0	0	00.0	1	13	7.7
353	1	N.D.	N.D.	3	77	3.9

	SHARP			HAMILTON		
SIC	NO.OF ENTRANTS	STOCK	RATE OF ENTRY	NO OF ENTRANTS	STOCK	RATE OF ENTRY
354	17	55	30.9	20	67	29.9
361	13	120	10.8	10	81	12.4
362	4	21	19.0	0	14	00.0
363	0	0	00.0	2	16	12.5
364	25	39	64.1	16	45	35.6
365	0	0	00.0	4	19	21.1
366	0	0	00.0	2	28	7.1
367	2	5	40.0	10	72	13.9
368	3	12	25.0	6	25	24.0
369	4	55	7.27	7	60	7.0
370	1	N.D.	N.D	0	0	00.0
371	0	0	00.0	24	167	14.1
372	0	0	00.0	10	65	15.4
380	0	0	00.0	1	1	100.0
381	39	168	23.2	19	207	9.2
382	4	23	17.4	3	N.D.	N.D
383	1	N.D.	N.D.	5	29	17.2
384	0	0	00.0	0	1	00.0
385	0	0	00.0	2	5	40.0
390	257	1571	16.3	18	75	24.0
391	6	231	2.6	6	23	26.1
392	0	0	00.0	1	1	100.0
393	32	193	16.5	2	21	9.5
394	5	43	11.6	6	48	12.5

SIC	NO.OF ENTRANTS	STOCK	RATE OF ENTRY	NO.OF ENTRANTS	STOCK	RATE OF ENTRY
395	3	22	13.6	0	20	00.0
396	76	469	16.2	7	45	15.6
399	296	782	37.8	183	608	30.1

1.Taken from Hamilton (1982) Appendix 1.2

2.Source:Yellow Pages for N.W.,S.W.,N.E. and S.E.B'Hammanually counted from appropriate catagories.

CORRELATION CO-EFFICIENT BETWEEN RATES OF ENTRY IN EACH STUDY: 0.06

3.6 Comparison of Data Bases Results:
The following section compares the data from several studies measuring new independent firms with the results from the present data source. While no two of the data bases are directly comparable in terms of scope or time period, the researcher has attempted to adjust for the differences and, where this was not possible, to state the differences as clearly as possible so that the reader should be aware in what direction the results are affected.

3.6.1 Hamilton (1982):
Hamilton's study covered all manufacturing for the whole of Scotland using Factory Inspectorate data.Table 3.3 compares the data bases for the SIC's for which this researcher had data. Over the comparable categories, of the SIC, the researcher's data base totals 1249 firms compared to Hamilton's 725.In terms of time period ,this study is closest to the researcher's,covering approximately 4 years from January 1976 to March 1980.They are also similar in scope both enumerating new independent entry (although Hamilton also covers new dependent entry) but where Hamilton's covers Scotland and all manufacturing, this study covers the West Midlands and Division 3 of the Standard Industrial Classification. It is, however, a relatively easy matter,because of the detail provided by Hamilton in his thesis, to isolate the figures for comparison which are are presented in Table 3.3.

To facilitate the comparison of the rates of entry, the researcher calculated the pearson correlation co-efficient between the rates of of entry in the data sets (using only trades where the number of entrants in both studies was at least 10). This emerged as 0.06 which indicates virtually no correlation at all. If the rate of entry could be explained by some factors which vary between trade but not between regions,such as capital cost of entry or industry profitability , a stronger relationship between the rates of entry in the same trades in the two regions might have been expected

3.6.2 Beesley (1955):

The comparison with Beesley's data was made difficult because the article in the Journal of Industrial Economics does not specify the exact areas to which Beesley's zones refer, nor the exact sections of the SIC for which the data is presented. The N.W. zone was described as including Wolverhampton C.B. while the S.W. zone centred on Dudley C.B. The industries covered are simply described as the metal industries. Moreover Beesley covered a fifteen year period where the researcher covered only four.

The following comparison of this study's data with that of Beesley uses the following definitions for the researcher's data:

N.W. Zone : All firms with a WV postcoding.

S.W. Zone : All firms with a DY postcoding.

Metal Industries : Standard Industrial Classification Order XII covering Metal Goods not elsewhere specified and Order VI covering Metal Manufacture and Founding MLH 332 in SIC. Order VII was also included since it is recognised in the 1980 Rev. SIC that Metal Cutting and Forming machine tools belongs in the same 5 figure classification as other engineers' small tools.

Beesley noted in his analysis the markedly higher entry rate for the N.W. as opposed to the S.W. zone. If the researcher has defined the zones in her study on an approximately comparable basis, no such difference is discernible for the 1979-83 period. It seems likely that the elimination of this difference is due to the rise of the S.W. zone as an industrial area since Beesley's study in 1938. This is indicated by the Total Population(figures in table 3.4) of the trades in the study more than doubling since 1938. Not unexpectedly where there is a marked increase in industrial activity , entrepreneurial activity or at least new firm formation also increases. Where the industrial population doubled, new firm formation trebled,resulting in an almost doubling of the rate of entry annually in the years 1979-83 compared to the years 1923-38. On the other hand, the total population of the N.W.Zone appears to have remained relatively constant but the rate of entry still more than doubled. The constancy of the Total Population figure could mask considerable activity in the entry among established firms and exit among middle and old-age firms which would not appear in the figures of Table 3.4 if these births and deaths balanced out.This possibility cannot be proved or disproved but it is perhaps worth mentioning that the failure rate among new independent entrants in the N.W.Zone was considerably less than the average for this study and thus no indication that the exit rate as a whole was balancing the entry rate,maintaining a constant total population. A tentative conclusion is that independent individuals are spotting more

Table 3.5

COMPARISON OF BEESLEY(1955) AND PRESENT STUDY

	Beesley 1923-38	Sharp 1979-83	
	Metal Trades	Metal Trades	Div.3 SIC
S.W.ZONE			
Total Population[3]	242	532	757
Entrants:			
Survivors[2]	72	57	92
Non-survivors	52	45	69
Total Entrants	124	105	161
Annual Rate Of Entry	2.46	4.54	4.74
N.W.ZONE			
Total Population[3]	478	431	603
Entrants:			
Survivors[2]	182	63	84
Non-Survivors	126	30	49
Total Entrants	208	93	133
Annual Rate Of Entry	1.72	5.0	4.83

1. Rate Of Entry = $\frac{ES + ENS}{\text{Total Population in Base Year} + ES + ENS}$

ES=Surviving entrants at end of study period
ENS=Non-surviving entrants at end of study period

Annual Rate of Entry: Beesley = $\frac{ES + ENS}{\text{Total Pop.in Base Year}^{3} + ES + ENS}$

Sharp $\frac{\frac{ES + ENS}{\text{Total Pop. in Base Year}^{3} + ES + ENS}}{4}$

2. Beesley : Survivors at 1938
   Sharp : Survivors at Dec. 1983
3. Base Year: Beesley 1923
   Sharp 1980

opportunities for new firm formation in the N.W.Zone which is not paralleled by an increase in opportunities generally in the region since the total population has not increased.Only an analysis over time would be completely revealing.If new independent entry has increased as indicated in the study,the total population would have been expected to increase over time(although the relatively short life span of small firms would modify this expectation

3.6.3 Firn and Swales (1978):

Firn and Swales in their comparative study of the West Midlands and Clydeside eschewed the use of Register of Companies (because it omits unincorporated businesses which are important in small firms) and the Factory Inspectorate (because it contains only employment information on operatives which means it has important sectoral and size group biases built in) in favour of the Employers' Register held on E.D. 871 envelopes at all local offices of the D.O.E. However, their chosen source turned out to be particularly inadequate for the West Midlands. A lower cut-off point of five employees was adopted to improve the reliability of the estimates of new establishment creation. They also admit that the difference in size distribution of new establishments between Clydeside and West Midlands was almost certainly due to deficiencies in the data for that size group in the West Midlands. They consider that a large number of firms in the micro-category (1-10 employees) for which the BSO does not publish figures, can go through their entire existence without ever entering the government's various statistical nets. These deficiencies and restrictions in the data affected the West Midlands' results relatively more and must account for some of the relatively poor showing of the West Midlands which, although it had nearly twice as many new independent manufacturing companies, the birth rates in these categories were in every employment size group greater in Clydeside than in the West Midlands. Although the relatively good performance of Clydeside was mostly attributable to their attraction of new firms which were not independent, Firn and Swales conclude that the West Midlands is tackling its problems by "developing an indigenous growth strategy" including an attempt to "increase the creation of new enterprises" and "developing policies to promote entrepreneurship". Further, although the two studies are not strictly comparable:

> "there can be little doubt that the rates of new establishment and new firm creation found (by Beesley) then were,ceteris paribus, above those encountered in the present research".
>
> Firn and Swales 1978 p.211.

The comparison of Beesley's data (table 3.6) with that of the researcher indicate that Beesley's findings were at least of similar magnitude and, if anything, less than that found by the researcher. The researcher would thus not agree with Firn and Swales that the entrepreneurial drive of the West Midlands, where this is measured by the activity of independent individuals (rather than by the activity of established firms or mobile, in-movers), is in decline.

While the researcher did not have employment information for most of the firms, that collected for the sample survey describes an average employment in new independent firms of 3.8. The new independent manufacturing firms in this study for the four years 1979-1983 totalled 1043. This compares with Firn and Swales 432 firms for the nine year period 1963-1972. If the 432 firms for the nine year period can, somewhat arbitrarily, be halved to enhance comparability of the two studies, this would set the researcher's 1043 in the metal and engineering trades only against the 216 (432/2) which Firn and Swales found for all manufacturing.

3.6.4 Other Data Sources:

Since no one has used the telephone directories as a data source in quite the way the researcher has, there are no direct sources for comparison and equally no check on its accuracy. Hamilton (1982) was able to check the accuracy of his new firm population estimate by comparing his source's enumeration of the total of manufacturing establishments against census and other aggregate data.

However, the accuracy of that larger part of the data base which was checked out by speaking to the founder(s) cannot be in doubt. The numbers unobtainable have been checked out as far as possible and remain the only area of doubt.

Although comparison of data across regions and industries cannot be statistically rigorous, the researcher found that it helped to put the present data into perspective. All the studies on new firm formation, whether using aggregated government figures or establishment based data of their own devising, testify to the difficulties of being comprehensive and accurate in this sector. Firn and Swales (1978 p.205) are pessimistic about ever being able to produce accurate statistics for these units in the "Nano -economic" sector, while Lloyd (1980 p.4) suggests that new firms research has its own particular methodological difficulties, not the least of which is finding new businesses. His complex search procedure (opp.cit. Appendix I) revealed only thirty new (opened during or after 1976) manufacturing firms in Merseyside. Cross's (1981 p.143) source (Scottish Council, Development and Industry) revealed a total of 504 new independent manufacturing companies in Scotland during a nine year 1968-1977. Johnson and Cathcart (1979), using data from the Companies Register, found 74 new independent companies in the Northern Region incorporated in the years 1971 to 1973 inclusive. They also incidentally highlighted an inadequacy of the Companies Register. They found that over 70% of the businesses were formed in a year other than the date of their incorporation. Dicken and Lloyd (1981 p.33) refer to the 2312 survivors among new businesses formed in Greater Manchester between 1966 and 1975. Again this covered all manufacturing but would understate new firm formations 1966 to 1975 by the numbers of failures in that period. Further it refers to all new firms and not just to new independent firms. However, in terms of a crude comparison, it is possibly the only study apart from Beesley's (1955) which enumerates new firms of a similar magnitude to the present study. Even Gudgin's very thorough study of the East Midlands isolated only 681 new firms over all

manufacturing for the eight year period 1947-1955 (Leicestershire and Rutland only).

The differences in numbers of new independent entrants between the above sources and the researcher's data could be due to either the relative superiority of the data source or to a greater 'independent' element in the entrepreneurship of the region, but while no general conclusions can be drawn the figures are detailed as the only comparison available and as tacit evidence of the superiority of the present data source in isolating the new independent firm population.

APPENDIX 4

THE QUESTIONNAIRE SAMPLE

The micro-data base on completion of the yellow pages exercise described in Appendix 3 , comprised for each firm, an index card in the following format:

Phone Number	Name
Live or No. Unobtainable	
Age in Months	
Check on Yellow Pages Classification	
Willing to co-operate in further study	
Address	Post-Code

The size of the sample to be selected was decided with reference to the time available and the cost involved and the adequacy of the sample size selected was assessed with reference to the number of live firms in the sampling frame. The sampling frame was all the live new independent firms discovered in the Yellow Pages exercise detailed in chapter 3. While no statistical procedures exist to determine the appropriate sample size, the 75 firms to be visited with the questionnaire represented ?% of the total number of live firms and ?% of the total micro-data set (live firms plus numbers unobtainable).

The 75 firms were chosen randomly by arranging the live firms' index cards in card boxes having shuffled them to get rid of any remaining order in their arrangment. 80 were to be selected, 75 to be visited and 5 for replacement purposes, as the sampling frame contained a small number of firms who said they would not be willing to co-operate further. With 80 to be selected and [32] firms in the sampling frame random sampling was achieved by selecting every /th card.

In the end questionnaires were completed for 74 firms. The reason for this was that the 75th firm , while willing to cooperate, postponed 2 appointments and had to dash out on business part way through the 3rd appointment with the questionnaire substantially incomplete. Since this was some 2 months after the remaining questionnaires had been completed this last was holding up further analysis. It was decided that the the representativeness of the sample would not be affected by proceeding with the analysis on the basis of 74 firms. None of the replacement firms in the sample required to be used.

Appendix 5

THE QUESTIONNAIRE

Appendix 5 is a copy of the questionnaire used on the sample survey of 74 firms. Some of the information although coded could not be used in the Discriminant Analyses which required, as a minimum, interval level data. Other responses were not codeable at all but were included for the researcher's own understanding of the new independent firm phenomenon. Several other questions, 54, 55 and 56, did not produce sufficiently interesting replies and were eliminated on the grounds that they lacked substantive meaning.

STRICTLY CONFIDENTIAL

Name of Firm	.....	Coding
	.....	Case No.
Address of Firm Present	.....	
	.....	Postcode 1
Previous (if any)	.....	
	.....	Postcode 2
Home area of founder(s)	.....	
	.....	Distance 2
	.....	

.....

Home area of founder(s) .....
when established business
if different from above ..... Distance 1

.....

.....

Telephone Number .....

Age of Founders ..... Years

Date of Interview .....

1. How many founders are there of this firm?

Number 1-4

2. How long have you worked in this sector?

Years

3. Have you ever worked in a sales capacity in this trade or any other?

No

This trade

Other trade

4. Did you seriously consider setting up in any trade or industry other than your present one?

No 0

Yes 1

5. If so what prevented you doing so?

.....

.....

6. Have you run your own business before?

No 0

Yes 1

7. If yes what was the nature of the business

Same as present business	1
Similar to Present Business	2
Other manufacturing - local	3
Other manufacturing - non-local	4
Service - local	5
Service - non-local	6

8. Where did you operate?

..... Postcode

..... Distance (miles)

.....

.....

9. When were you last employed by another firm? 19

Months

9a. Why did you leave your previous employer?

Sacked		
Redundant	Voluntary	= 0
Left	Involuntary	= 1
Closed		

10. In what business was your previous employer?

Same	1
Similar	2
Different	3
Related	4

10a. Standard Industrial Classification of Employer. SIC

11. Where was he located?

..... Distance/Miles

.....

.....

.....

12. Name of the firm you used to work for.

1. .....
2. ..... Not coded
3. .....
4. .....

13. How many did your previous employer employ on the premises on which you worked?

Employment

14. How would you describe your contract with the customers of your previous employer?

Frequent	1
Infrequent	2
Non-existent	3

15. What led you to believe there was a demand for your present product?

Personal Work Experience	1
Personal Private Experience	2
Contacts	3
Contracts	4
Demise of Contac	5
Optimism	6
Don't Know	7
Planned Search	8

16. How many firms are there in the West Midlands Area producing similar products or performing similar

processes to you?

None	Actual
1 - 9	Number
10 - 19	
20 - 49	
50 - 100	

17. How many of them are in the Birmingham/Dudley/Walsall/ Wolverhampton area? (Prompt: 5 mile radius of present location).

All	Percentage
Nearly all	of Question
More than half	16.
Less than half	

18. How many of them are in the immediate local area? (Prompt: 2 mile radius present location).

All	Percentage
Nearly all	of Question
More than half	16.
Less than half.	

19. In what ways if any does your firm's product or service differ from those of firms producing similar products?

1. None
2 Superior Quality
3. Unique proce
4. Unique produ

.....

.....

5. Small scale operation.

20. Do you have any contact with firms producing the same product as you?

Frequent	1
Infrequent	2
Not at all	3

21. What do you produce at this plant?

	Activity	%
1		
2		
3		
4		

Give approx % of total output

22. Which of these best described your operations?

	Major	Secondary
Subcontracted production		1
Production of individual units to customer's requirements		2
Production of small batches to requirements		3
Production of large batches		4
Continuous flow production		5
Further processing of semi-manufactured units		6

Assembly	7
Manufacturing Service	8
Repair	9
Other Not Manufacturing	0

23. How would you describe your materials input?

Raw, unprocessed material	
Processed raw material	
Materials received from customer	
Semi-manufactured units	Process 1
Finished components	Industrial Requirement 2
	Component 3
	Assembly 4
	Product 5
Processed raw material	Service 6
Processed customers materials	
Semi- manufactured units	
Finished components	
Finished goods	

25. How many firms are there in the Birmingham area using the same machinery as you?

0 - 9	Number
10 - 19	
20 - 49	
50 -100	

More than 100

26. Can you give some idea of what they are producing?

..... Not coded

.....

.....

27. Do you do any subcontracting?

YES Yes 1

NO No 0

28. If so can you tell me what you subcontract and how much as a proportion of your turnover?

..... Percentage

.....

.....

29. Where are your subcontractors located?

Local

..... W.M.

..... Outside W.M.

30. How many customers/contractors does the firm service on a regular basis?

1 - 4 Number

5 - 9

10 - 19

20 - 49

50 - 100

More than 100

31. How many of these did you have as customers in your first 6 months of production?

Percentage

32. How many of these are main contractors?

33. What do they produce?

.....	Customers:
.....	Mfrs. Agents %
.....	Manufac. %
.....	Wholesalers %
.....	Final Consum. %
	Total 10

34. How many of these are other manufacturers?

35. What do they produce?

.....

.....

36. How many customers does the firm service only occasionally?

Number

1 - 4
5 - 9

10 - 19

20 - 49

50 - 100

More than 100

37. Approximately how many customers/contractors has the firm serviced only once?

0	Not coded
1 - 4	
5 - 9	
10 - 20	
More than twenty	

38. Do you do any work for your previous employer?

None	1
A little	2
A lot	3

39. How many of your customers/contractors are in the local area? (Prompt: 5 mile radius).

100%	Percentage
75 - 99	
50 - 74	
25 - 49	
0 - 24	

40. How many of your customers/contractors are outside the local area but within the West Midlands?

100%	Percentage
75 - 99	
50 - 74	
25 - 49	
0 - 24	

41. How many are further afield and where?

..... Percentage

.....

42 Do you consider it necessary to protect the identity of your customers from others in your trade?

YES	Yes 1
NO	No 0

43. How many does your largest customer employ?

Number

44. What is the average size in employment of your customers?

Number

45. Are you currently and actively seeking new customers?

YES	Yes 1
NO	No 0

46. How do you go about attracting new customers?

Advertising in own areas local newspapers	1
Advertising in local newspapers of other areas	2
Advertising in Trade Papers	3
Telephone Directories/Yellow Pages	4
Exhibitions/demonstrations/displays/salesmen	5
Personal approach	6
Circulars	7
Word of mouth/recommendation	8
Contacts	9

47. Which of the above is the most successful?
(Please tick only one)

Advertising in own areas local newspapers	1
Advertising in local newspapers of other areas	2
Advertising in Trade Papers	3
Telephone Directories/Yellow Pages	4
Exhibitions/demonstrations/displays/salesmen	5
Personal approach	6
Circulars	7
Word of mouth/recommendation	8
Contacts	

48. If you use the personal approach, how do you decide who to approach?

..... Not coded

.....

49. To which category of customer does most of your output go?

To main contractor Not coded

To other manufacturers

To wholesalers

To final consumers

50. Do you feel you have a competitive advantage in any way over your competitors?

YES Yes 1

NO No 0

51. If yes, is this advantage primarily in:

Low overheads 1

Price (cutting profit margin) 2

Design/quality 3

Prompt delivery 4

Proximity of customers 5

Flexibility re customers' needs 6

Equipment 7

Personnel 8

Low costs 9

52. Where are your main supplier(s) located?

Local

..... W.M.

..... Outside W.M.

53. Do you use the same supplier(s) as you did at the inception of your business?

YES Not coded

NO

54. If no, where was your original supplier(s) located?

Not coded

55. Could you easily find a replacement for your supplier?

(a) In this area

YES Not coded

NO

(b) Anywhere in the West Midlands

YES

NO

56. At what stage in launching the business did you begin to look for suitable premises?

Pre-launch Not coded

Post launch

57. How did you go about finding suitable premises for the new business?

Business contacts

Private contacts

Newspapers

Estate Agents

Personal Search of areas

Local authority

Central Government

Any Small Business Agency

.....

.....

1.All sources use

2.Successful sour

58. Did you have difficulty finding premises?

YES Yes 1

NO No 0

59 In how wide an area did you look for premises?

2/3 mile radius of present location 1

5 mile radius of present location 2

West Midlands Conurbation 3

Further afield 4

60. When you started the business, in how wide an area would you have considered premises?

1

	2
West Midlands Conurbation	3
Further afield	4

61. Where would you like to be located?

..... Distance/miles

.....

62. Why?

..... Not coded

.....

63. What type of tenure do you have on these premises?

Private rent or lease	1
Public rent or lease	2
Freehold	3

64. If premises rented or leased, what was the initial period of the rental or lease?

0 - 1 years	1
1 - 2 years	2
3 - 5 years	3
6 - 10 years	4
11 - 25 years	5
725 years	6
Don't Know	7

65. What is the approximate total floor area of the factory at present?

	000 sq.ft.	Area/Square feet
66. How old are these premises?		
0 - 5		1
6 - 20		2
21 - 40		3
41 - 65		4
66 - 80		5
780		6

67. How do you rate your location?

(a) Convenience of access	1,2,3,4,5,6,7
(b) Convenience of cost of transport to existing markets	
(c) Convenience of supplies to your premises	
(d) Proximity to skilled labour	
(e) Proximity to firms producing similar goods	
(f) Proximity to other manufacturers	
(g) Other (please specify)	

Please rate each either very good, good, fair, poor or not important.

68. Have the founders gained any qualifications of any kind since they left school?

.....	Technical	
.....	ADV.Ted.	2
.....	Management	1
.....	Advanced Man.	2

69. What was your main source of capital when starting your business?

Personal savings.

Loans/Overdraft from banks giving personal guarantee/security

Loans/Overdraft from banks without giving personal guarantee/security

House mortgage

Loans or gifts from friends or relatives

Loans from finance companies

Redundancy

Previous business

Government backed loans

70. What other sources of finance did you use?

Personal savings

Loans/Overdraft from banks giving personal guarantee/security

Loans/Overdraft from banks without giving personal guarantee/security

House mortgage

Loans or gifts from friends or relatives

Loans from finance companies

Redundancy

Previous Business

Government backed loans

71. What was your total initial investment in the business?

.....

.....

72. Do you have any firm plans for expansion in the next 12 months? e.g. additional employees, new plant, larger premises, new product, new markets.

..... Add. Employees

..... New Plant

..... New Premises

..... New Prod/Proces

..... New Markets

Forward Integ.

6

Backward Integ.

7

APPENDIX 6

Description Of Variables Considered For Discriminant Analysis:

INVEST: The total investment in the business by the founders and others.

EMPLOY: The total employment in the business excluding founders. Part-time employees were counted as half a unit of employment (although such cases were rare). In some cases the researcher recognised that founders were employing some individuals on an 'informal' basis and on at least one occasion the employment information was vouched strictly 'off the record'. While it is impossible to say what exact effect this has on the overall figues for employment it does indicate that if anything they will be underestimates.

AGEFON: The age of the founder(s) in years. Where there was more than one founder the ages were added together and averaged.

SALEXP: Constrained to interval level, this measured not years of SALEXP but whether or not the founder(s) had had any sales experience in their present trade or any other trade. In the final discriminant analyses only sales experience in their present trade was taken as relevant and treated additively where there was more than one founder (in practise this addition was necessary on very few occasions since seldom had more than one founder had sales experience).

TRDEXP: Measured in years the experience of the founder(s) in their present trade. Where there was more than one founder, the numbers of years experience were treated additively.

SAMWOK: The number of competitors, as perceived by the founders, of the new firm in the West Midlands.

LOCALC: Measured the percentage of the firms West Midlands competitors located in the area local to the new firm (local as defined as a five mile radius).

LCALCU: Is the percentage of the firms total customers located in the local (within a five mile radius) area.

CUSWM: Is the percentage of the firms total customers located within the West Midlands but outside the 'local' area.

CUSFUR: Is the percentage of the firms total customers located outside the West Midlands.

TOTCUS: Enumerates the total number of customers a firm considers to be regular.

CUSMFR: Is the percentage of the new firms customers which are also in manufacturing.

CUSDIT: Is the percentage of the new firms customers which are distributors or wholesalers.

CUSCON: Is the percentage of the new firms customers which are final consumers .

LAGCUS: Is the size, in terms of employment, of the new firms largest customer.

NOFON: In integers, the number of founders active in the firm. Sleeping, financial partners were excluded, their entirely financial input having been judged to be accounted for in INVEST.

OWNBUS: YES or NO to the question "have any of the founders run their own business before". If even one of the founders had had such previous experience, in theory this would prejudice the business to survival.

BUSPRV: Constrained to interval level measurement, codifys the responses of founders to whether they were doing the same or similar work to their previous employers.

EMPEML: Measured the average number of employees at the premises of previous employment.

RESLEV: Constrained to interval level measurement, this variable captured whether the departure from previous employment had been voluntary or involuntary.

DIFFER: Constrained to interval level measurement, this variable lost the richness it had in the questionnaire. It measures on a YES/NO basis whether founder(s) considered that their product or process differed from others producing similar products or carrying out similar processes.

AVGCUS: Is the average size, in numbers of employees, of the new firms customers.

SIXMTH: Is the proportion of the firms present customers which it had in its first six months of operation.

LCSECH: Is a three interval measure of the search engaged in to find the initial location of the new firm.

TECQAL: Measures at two intervals, ordinary and advanced, the founders' technical qualifications, if any, in their present trade.

MANQAL: Measures at two intervals, ordinary and advanced, the founders' management qualifications, if any.

CONTAC: Measured on a scale of 1 to 3 the frequency of contact of the founders with other firms in the same business.

PERCEN: Measured on as percentage, the proportion of total turnover accounted for by subcontracted production of the new firm.

SECRET: YES/NO reply measured whether a founder thought it necessary to protect for his own benefit the identities of his customers.

CUSSEK: YES/NO reply to indicate whether or not founders were currently seeking new customers

METHNO: The number of marketing strategies being pursued by the new firm.

SUPLOC: Location, local, West Midlands or outside of main suppliers of raw material to the new firm.

COMADV: YES/NO reply to whether or not new founder(s) considered he had a competitive advantage over his competitors.

APPENDIX 7

SURVIVORS AND FAILURES BY 5 FIGURE SIC

SIC	FAILURES	SURVIVORS	ROW TOTAL % OF COLUMN TOTAL
27610.	2 66.7%	1 33.3%	3 0.2%
31120.	0 0.0%	2 100.0%	2 0.2%
31200.	5 62.5%	3 37.5%	8 0.6%
31300.	0 0.0%	2 100.0%	2 0.2%
31320.	1 100.0%	0 0.0%	1 0.1%
31330.	2 18.2%	9 81.8%	11 0.8%
31340.	2 66.7%	1 33.3%	3 0.2%
32100.	0 0.0%	5 100.0%	5 0.4%
32200.	0 0.0%	2 100.0%	2 0.2%
32212.	0 0.0%	1 100.0%	1 0.1%
32300.	8 19.1%	13 80.9%	23 1.8%
32550.	1 100.0%	0 0.0%	1 0.1%
32554.	0 0.0%	1 100.0%	1 0.1%
32800.	0 0.0%	1 100.0%	1 0.1%
33100.	2 50.0%	2 50.0%	4 0.3%
33200.	0 0.0%	1 100.0%	1 0.1%

SURVIVORS AND FAILURES BY 5 FIGURE SIC CONT.

SIC	FAILURES	SURVIVORS	TOTAL
33210.	1	3	4
	25.0%	75.0%	0.3%
33220.	1	0	1
	100.0%	0.0%	0.1%
33230.	2	4	6
	33.3%	66.7%	0.5%
33320.	1	1	2
	50.0%	50.0%	0.2%
33330.	2	4	6
	33.3%	66.7%	0.5%
33340.	1	8	9
	11.1%	88.9%	0.7%
33400.	1	1	2
	50.0%	50.0%	0.2%
33410.	3	1	4
	75.0%	25.0%	0.3%
33700.	0	1	1
	0.0%	100.0%	0.1%
33710.	6	10	16
	37.5%	62.5%	1.2%
33720.	1	4	5
	20.0%	80.0%	0.4%
33730.	0	1	1
	0.0%	100.0%	0.1%
33740.	6	14	20
	30.0%	70.0%	1.5%
33930.	1	1	2
	50.0%	50.0%	0.2%
33940.	8	6	14
	57.1%	42.9%	1.1%
33950.	0	1	1
	0.0%	100.0%	0.1%
33960.	2	1	3
	66.7%	33.3%	0.2%

SURVIVORS AND FAILURES BY 5 FIGURE SIC cont.

SIC	FAILURES	SURVIVORS	TOTAL
33990.	5 38.5%	8 61.5%	13 1.0%
34110.	0 0.0%	1 100.0%	1 0.1%
34120.	2 28.6%	5 71.4%	7 0.5%
34130.	1 50.0%	1 50.0%	2 0.2%
34140.	24 37.5%	40 62.5%	64 4.8%
34144.	0 0.0%	1 100.0%	1 0.1%
34150.	4 36.4%	7 63.6%	11 0.8%
34910.	3 75.0%	1 25.0%	4 0.3%
34930.	1 20.0%	4 80.0%	5 0.4%
35300.	0 0.0%	1 100.0%	1 0.1%
35410.	0 0.0%	1 100.0%	1 0.1%
35420.	9 56.3%	7 43.8%	16 1.2%
36110.	0 0.0%	2 100.0%	2 0.2%
36120.	1 20.0%	4 80.0%	5 0.4%
36130.	4 66.7%	2 33.3%	6 0.5%
36200.	2 50.0%	2 50.0%	4 0.3%

SURVIVORS AND FAILURES BY 5 FIGURE SIC cont.

SIC	FAILURES	SURVIVORS	TOTAL
36410.	1 100.0%	0 0.0%	1 0.1%
36430.	14 58.3%	10 41.7%	24 1.8%
36700.	1 100.0%	0 0.0%	1 0.1%
36720.	0 0.0%	1 100.0%	1 0.1%
36800.	2 66.7%	1 33.3%	3 0.2%
36910.	0 0.0%	1 100.0%	1 0.1%
36950.	3 100.0%	0 0.0%	3 0.2%
37010.	1 100.0%	0 0.0%	1 0.1%
38100.	18 46.2%	21 53.8%	39 3.0%
38200.	1 25.0%	3 75.0%	4 0.3%
38340.	0 0.0%	1 100.0%	1 0.1%
39000.	98 38.1%	159 61.9%	257 19.5%
39100.	4 40.0%	6 60.0%	10 0.8%
39300.	10 31.3%	22 68.8%	32 2.4%
39400.	1 20.0%	4 80.0%	5 0.4%
39500.	2 66.7%	1 33.3%	3 0.2%

SURVIVORS AND FAILURES BY 5 FIGURE SIC CONT.

SIC	FAILURES	SURVIVORS	TOTAL
39600.	35 46.1%	41 53.9%	76 5.8%
39900.	1 33.3%	2 66.7%	3 0.2%
39910.	5 20.8%	19 79.2%	24 1.8%
39911.	31 46.3%	36 53.7%	67 5.1%
39912.	63 42.3%	86 57.7%	149 11.3%
39920.	16 61.5%	10 38.5%	26 2.0%
39940.	3 30.0%	7 70.0%	10 0.8%
39960.	0 0.0%	1 100.0%	1 0.1%
39980.	7 43.8%	9 56.3%	16 1.2%
47400.	1 50.0%	1 50.0%	2 0.2%
48900.	2 66.7%	1 33.3%	3 0.2%
50000.	2 25.0%	6 75.0%	8 0.6%
61200.	0 0.0%	2 100.0%	2 0.2%
81240.	2 40.0%	3 60.0%	5 0.4%
83210.	57 43.5%	74 56.5%	131 9.9%
83250.	11 22.0%	39 78.0%	50 3.8%

SURVIVORS AND FAILURES BY 5 FIGURE SIC cont.

SIC	FAILURES	SURVIVORS	TOTAL
83270.	4 44.4%	5 55.6%	9 0.7%
83702.	0 0.0%	1 100.0%	1 0.1%
83720.	0 0.0%	1 100.0%	1 0.1%
87910.	10 32.3%	21 67.7%	31 2.3%
87920.	0 0.0%	1 100.0%	1 0.1%
89400.	5 50.0%	5 50.0%	10 0.8%
COLUMN TOTAL	526 39.8%	795 60.2%	1321 100%

APPENDIX 8

TRADES ARRANGED BY NUMBER OF ENTRANTS IN ASCENDING ORDER

5 FIGURE SIC	%FAILURES	%SURVIVORS	TOTAL NO. OF ENTRANTS
3132	100	0	1
32212	0	100	1
328	0	100	1
332	0	100	1
337	0	100	1
3373	0	100	1
3395	0	100	1
3411	0	100	1
34144	0	100	1
353	0	100	1
3541	0	100	1
3641	100	0	1
367	100	0	1
3672	0	100	1
3691	0	100	1
3701	100	0	1
3834	0	100	1
3996	0	100	1
8792	0	100	1
3112	0	100	2
313	0	100	2
322	0	100	2
3255	50	50	2
3332	50	50	2
334	50	50	2
3393	50	50	2
3413	50	50	2
3611	0	100	2
474	50	50	2
612	0	100	2
8372	0	100	2
2671	66	34	3
3134	66	34	3
3396	66	34	3
368	66	34	3
3695	100	0	3
395	66	34	3
399	34	66	3
489	66	34	3
331	50	50	4
3321	25	75	4
3341	75	25	4
3491	75	25	4
362	50	50	4
382	25	75	4
321	0	100	5
3372	20	80	5

5 Figure SIC	%Failures	%Survivors	Total No. of Entrants
3493	20	80	5
3612	20	80	5
394	20	80	5
8124	40	60	5
3323	34	66	6
3333	34	66	6
3613	66	34	6
3412	29	71	7
312	63	37	8
500	25	75	8
3334	11	89	9
8327	44	56	9
391	40	60	10
3994	30	70	10
894	50	50	10
3133	18	82	11
3415	36	64	11
3399	38	62	13
3394	57	43	14
3998	44	56	16
3542	56	44	16
3371	37	63	16
3374	30	70	20
323	52	48	23
3643	58	41	24
3991	21	79	24
3992	61	39	26
8791	32	68	31
393	31	69	32
381	46	54	39
8325	22	78	50
3414	36	64	65
39911	46	54	67
396	46	54	76
8321	44	56	131
39912	42	58	149
390	38	62	257
Total	526	795	1321

1.Not all of the SIC catagories belong to Division 3 of the SIC but are included for interest.

APPENDIX 9

FAILURES AND SURVIVORS BY MINIMUM LIST HEADING

SIC		FAILURES	SURVIVORS	ROW TOTAL
276.	COUNT	2	1	3
	ROW %	66.7	33.3	0.2
311.	COUNT	0	2	2
	ROW %	0.0	100.0	0.2
312.	COUNT	5	3	8
	ROW %	62.5	37.5	0.6
313.	COUNT	5	12	17
	ROW %	29.4	70.6	1.3
321.	COUNT	0	5	5
	ROW %	0.0	100.0	0.4
322.	COUNT	0	3	3
	ROW %	0.0	100.0	0.2
323.	COUNT	8	15	23
	ROW %	19.1	80.9	0.8
325.	COUNT	1	1	2
	ROW %	50.0	50.0	0.2
328.	COUNT	0	1	1
	ROW %	0.0	100.0	0.1
331.	COUNT	2	2	4
	ROW %	50.0	50.0	0.3
332.	COUNT	4	8	12
	ROW %	33.3	66.7	0.9
333.	COUNT	4	13	17
	ROW %	23.5	76.5	1.3
334.	COUNT	4	2	6
	ROW %	66.7	33.3	0.5
337.	COUNT	13	30	43
	ROW %	30.2	69.8	3.3

SURVIVORS AND FAILURES BY MINIMUM LIST HEADING

SIC	ROW %	FAILURES	SURVIVORS	COUNT ROW TOTAL
339.		16	17	33
		48.5	51.5	2.5
341.		31	55	86
		36.0	64.0	6.5
349.		4	5	9
		44.4	55.6	0.7
353.		0	1	1
		0.0	100.0	0.1
354.		9	8	17
		52.9	47.1	1.3
361.		5	8	13
		38.5	61.5	1.0
362.		2	2	4
		50.0	50.0	0.3
364.		15	10	25
		60.0	40.0	1.9
367.		1	1	2
		50.0	50.0	0.2
368.		2	1	3
		66.7	33.3	0.2
369.		3	1	4
		75.0	25.0	0.3
370.		1	0	1
		100.0	0.0	0.1
381.		18	21	39
		46.2	53.8	3.0
382.		1	3	4
		25.0	75.0	0.3

SURVIVORS AND FAILURES BY MINIMUM LIST HEADING

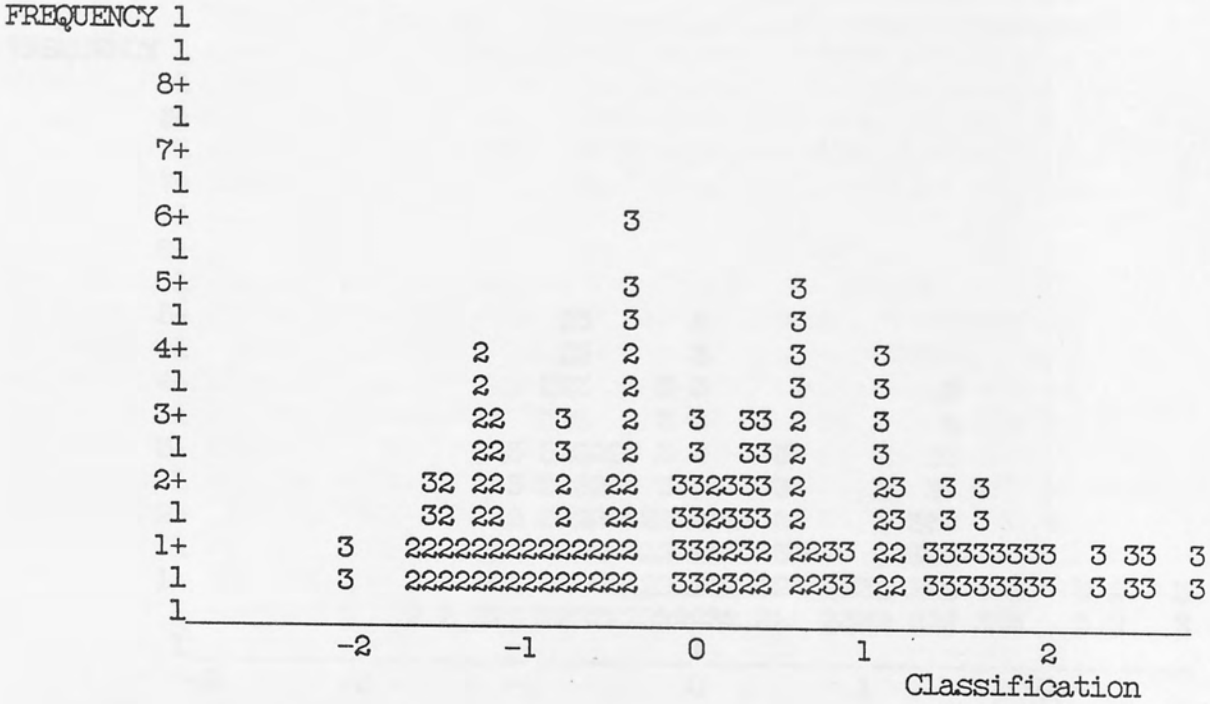
SIC	FAILURES	SURVIVORS	ROW TOTAL
383.	0	1	1
	0.0	100.0	0.1
390.	98	159	257
	38.1	61.9	19.5
391.	4	6	10
	40.0	60.0	0.8
393.	10	22	32
	31.3	68.8	2.4
394.	1	4	5
	20.0	80.0	0.4
395.	2	1	3
	66.7	33.3	0.2
396.	35	41	76
	46.1	53.9	5.8
399.	126	170	296
	42.6	57.4	22.4
474.	1	1	2
	50.0	50.0	0.2
489.	2	1	3
	66.7	33.3	0.2
500.	2	6	8
	25.0	75.0	0.6
812.	2	3	5
	40.0	60.0	0.4
832.	72	120	192
	37.2	62.8	14.6

SURVIVORS AND FAILURES BY MINIMUM LIST HEADING

SIC		FAILURES	SURVIVORS	ROW TOTAL
837.	COUNT	0	2	2
	ROW %	0.0	100.0	0.2
879.	COUNT	10	22	32
	ROW %	31.3	68.8	2.4
894.	COUNT	5	5	10
	ROW %	50.0	50.0	0.8
COLUMN TOTAL		526	795	1321
		39.8	60.2	100.0

APPENDIX 10

GRAPHICAL PRESENTATION OF SEPARATION OF GROUPS IN DISCRIMINANT RUN 1

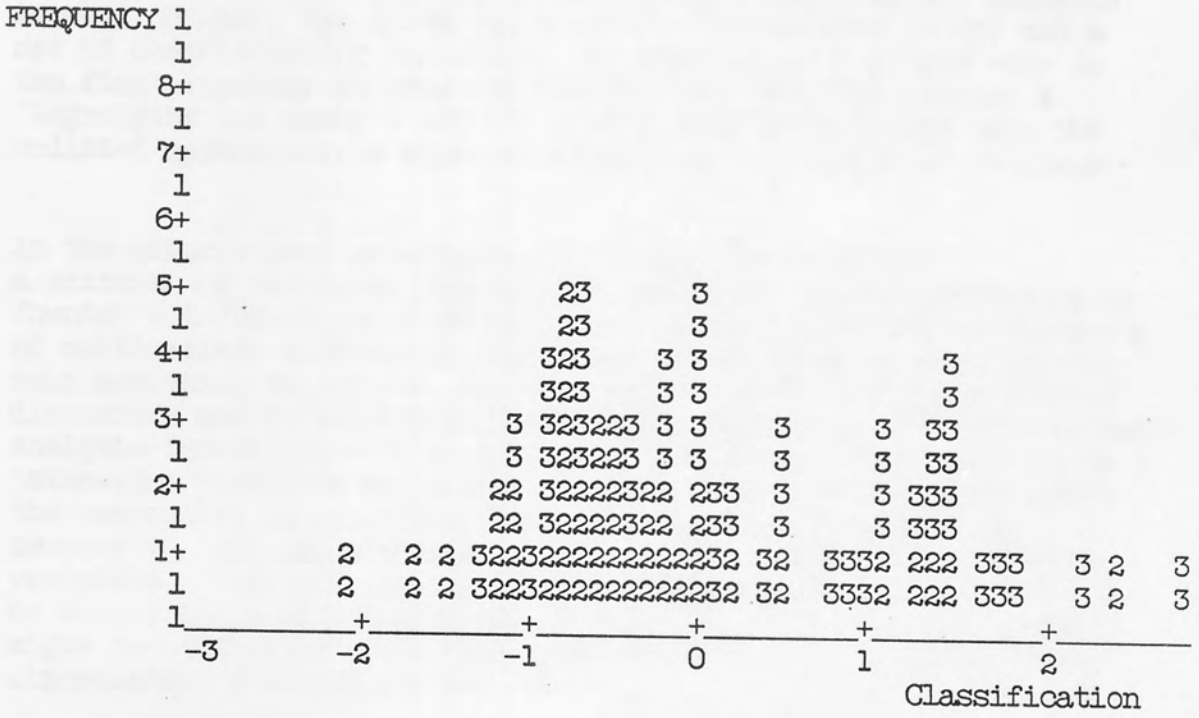


KEY :

2 Non-Survivors and No-Growth Survivors
3 Survivors with Growth

APPENDIX 11

GRAPHICAL PRESENTATION OF SEPARATION OF GROUPS IN DISCCRIMINANT RUN 2



KEY :

3 Survivors with Growth
2 Non-Survivors and No-Growth Survivors

Appendix 12

Discriminant Analysis

The primary difference between multiple regression and discriminant analysis is that the latter treats the dependent variable as being measured at the nominal level (i.e.groups).Discriminant analysis is used to study the differences between two or more groups and a set of discriminating variables. In this case the groups were in the first instance success and failure (but see this chapter 4 'Regrouping The Cases') and the discriminating variables were the codified questionnaire data collected from the sample of 74 firms.

In the discriminant subprogram it is possible to submit a mixture of variables purportedly measuring various dimensions of founder's information since it is part of the objective of the group of multivariate techniques, including factor analysis and discriminant analysis, to explore the data for the existence of underlying dimensions and relationships between the variables. The discriminant analysis technique, unlike the factor analysis, also incorporates a 'stepwise' technique which allows the inclusion of variables where the researcher is uncertain whether all of them are valuable or necessary. This procedure selects the most useful discriminating variables. Thus the researcher can submit data on variables which he merely suspects are good discriminators. Or the investigation might be exploratory with the researcher trying to discover useful discriminating variables.

The discriminant analysis can really be divided into two parts (Klecka 1980):

1. Analysis.

2. Classification.

The analysis provides us with discriminant functions which it is the role of the researcher to interpret with respect to theory. The classification aspect follows the output of the discriminant functions snd classifies the cases in the data according to the discriminant function. The discriminant function(s) can then also be used to classify cases for which the grouping is not known. For example, in the case of companies the discriminant function(s) could be used to predict success or failure.

The following sections describe first the analysis and then the classification aspects of the discriminant analysis.

Analysis :

The subprogram DISCRIMINANT on SPSS prints out the standardised discriminant function co-efficients. These are of great analytic importance and are analogous to the interpretation of beta weights in multiple regression. Ignoring the sign, which indicates whether the contribution of that variable is a positive or negative one, the co-efficients represent the relative contribution of its variable to that discriminant function.

The maximum number of discriminant functions derived will be either one less than the number of variables or equal to the number of discriminating variables, whichever is the smaller. As in factor analysis it may then be possible to 'name' the functions according to the variables which have large co-efficients within the functions.

However, all of the functions may not be useful to the researcher in that they may lack substantive significance or statistical significance or both. There are several measures which distinguish the statistically significant functions:

a) The eigenvalue measures the relative importance of a function vis-s-vis the other functions which have been derived. This can be converted into a relative percentage which measures only the inportance of the function relative to the others which have been derived. This measure of the significance of functions is only relative to other functions and is not relevant where only one function is derived.

b) The canonical correlation co-efficient for a function is more powerful. It summarises the degree of relatedness between the groups and the discriminant function. The canonical correlation can be a valuable tool in judging the substantive utility of the discriminant function, a high co-efficient indicating a strong relationship between the group and the function. A low co-efficient would indicate that the groups are not very different on the variables being analysed.

c) Possibly the most straightforward measure of the efficacy of the discriminant functions from a single analysis is the 'percentage of cases correctly grouped'. The discriminant function can be used to produce a discriminant score for each case. These scores are what are used to classify the cases into groups and as a simple option subprogram DISCRIMINANT can provide a table of the classifications of the cases. The percentage correctly classified indicates the accuracy of the procedure and indirectly confirms the degree of group separation. However, this percentage will always overstate to some degree the ability of the discriminant function to classify the cases correctly as it is based on the classification of the same cases used to derive the

discriminant function.

The Classification:

The classification is the last element of output from the discriminant analysis. On the basis of the known grouped cases the discriminant analysis produces a discriminant function(s) based on the discriminating variables. A 'hits and misses' table indicating the percentage of the cases correctley classified on the basis of the discriminant function(s) is computed.If this percentage is relatively high, the researcher could then use the discriminant function to classify cases whose grouping is not known e.g. predicting survival or non-survival of firms. To do this the researcher would have reference to the unstandardised discriminant co-efficients and in applying them to the values on the case's variables would arrive at a score for that case which would allocate it to one of the groups.

Stepwise Technique

Subprogram Discriminant on SPSS also offers a'stepwise' option referred to in the text.This can be used to eliminate unnecessary variables.The procedure begins by selecting the individual variable which provides the greatest univariate discrimination.It then pairs this first variable with each of the remaining variables ,one at a time ,to locate the combination which produces the greatest discrimination. The variable which contributed to the best pair is selected. The procedure goes on to combine the first two with each of the remaining variables to form triplets .The best triplet determines the third variable to be entered. This continues until all the variables have been selected or until the remaining variables do not contribute a sufficient increment to the functions ability to discriminate.

In the study each combination of variables submitted for analysis was run both with and without the stepwise option.This effectively doubled the number of Discriminant runs.The results are discussed in Chapter 4 .